

# NUCLEAR LAW BULLETIN No. 45

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This Bulletin includes a supplement

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,
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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.*

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## FOREWORD

A new Analytical Index comes with this Bulletin covering the forty-five issues published to-date and supersedes the previous Index. In line with the Bulletin policy to reproduce, to the extent feasible, the full texts of nuclear laws and regulations, a new service is provided to readers. From now onwards, the laws, regulations and international agreements whose original texts have been sent by the Secretariat to the IAEA International Nuclear Information System (INIS) will be indicated in the Index. Readers wishing to study a particular law, regulation or agreement which has not been reproduced in the Bulletin may order it directly from INIS, a computerized service for the dissemination of information on nuclear science, technology and law (the procedure to be followed is explained in the Index)

Also, the reader will find in the Supplement to this issue, the recently revised legislation establishing the third party liability and compensation system for nuclear damage in Japan

The aim of the Nuclear Law Bulletin is to report as fully as possible on nuclear laws, regulations, case-law and international agreements as well as on the work of competent international organisations. With the assistance of its national correspondents, the Bulletin provides information on nuclear legislation in the whole world. The NEA Secretariat thanks all those whose help has made it possible to continue publishing the Bulletin

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# STUDIES AND ARTICLES

## STUDY

### DEVELOPMENT AND HARMONIZATION OF INTERVENTION LEVELS IN CASE OF A NUCLEAR ACCIDENT

#### Abstract

The accident at Chernobyl highlighted the need to harmonize and improve protection of the population against ionizing radiation and also pinpointed certain gaps which existed in the nuclear third party liability regimes. This study focusses on work undertaken in international organisations regarding the development of harmonized intervention criteria, or levels, in case of radioactive contamination, as well as on national preventive measures and their regulatory aspects. Finally, the study also analyses the problem of intervention levels in the context of third party liability.

#### I. BACKGROUND

The accident at Chernobyl on 26th April 1986 was the first nuclear accident with repercussions on an international level and many actions were undertaken both in the USSR and in neighbouring countries to mitigate its effects. It is a fact that the relatively long duration of the radioactive release and the altitude reached by the plume favoured a wide distribution of the activity - not only throughout Europe - but also extending to countries such as Canada, the United States and Japan. This transboundary contamination took the countries concerned unawares, demonstrating a lack of preparedness in dealing with emergency situations of this kind and extremely varied responses which ranged from a simple intensification of usual monitoring programmes to mandatory instructions regarding marketing and consumption of foodstuffs.

Even if the variety of the reactions can be explained by the uneven levels of contamination, the different environmental features and national regulatory approaches, these discrepancies showed the need to harmonize radiation protection response to the risk of nuclear accidents and a better co-ordination of concepts and measures for protecting the public in such emergency situations. This resulted in heightened international co-operation

in the organisations concerned both at technical and at regulatory levels September 1986 saw the adoption of two Conventions sponsored by the International Atomic Energy Agency (IAEA) dealing respectively with Early Notification of a Nuclear Accident and Assistance in Case of a Nuclear Accident or Radiological Emergency. In parallel, work began or was resumed in the IAEA, the OECD Nuclear Energy Agency (NEA), the European Communities (EC), the World Health Organisation (WHO) and the Food and Agriculture Organisation (FAO) on the preparation and application of intervention criteria for the protection of the public in the event of a nuclear accident (intervention levels - see below), whilst the International Commission on Radiological Protection (ICRP) integrated this matter into the revision of its basic recommendations of 1977.

Also, although the USSR is not a Party to the Nuclear Liability Conventions which, therefore, did not come into play, the accident highlighted insufficiencies in the regime. In the context of the Paris Convention on Third Party Liability in the Field of Nuclear Energy, the NEA also studied the impact of intervention levels on that regime.

This study will concentrate on the establishment of intervention levels and actions undertaken in that field, also addressing their implications for the nuclear third party liability regime. To complete the information, the Annex contains an explanation of certain technical terms.

The study is based on information drawn from the technical publications and the Nuclear Law Bulletin articles referred to in the Notes and References. The main data have been taken from the NEA publications. The sections dealing specifically with work in the IAEA, CEC, WHO and FAO are based on those agencies' listed publications.

## **II. RADIATION PROTECTION PRINCIPLES AND INTERVENTION**

Before embarking on an analysis of the international work undertaken on intervention levels, their regulatory aspects and their bearing on nuclear third party liability regimes, it is useful to review the basic radiation protection principles established by the International Commission on Radiological Protection (ICRP) and their applicability to intervention levels, since the work undertaken to date by the international organisations and described here is based on the ICRP principles. Also, for clarity, an explanation is provided on the concept of intervention criteria.

### **1. International Commission on Radiological Protection (ICRP)**

The ICRP is the body which has established the most widely accepted principles of radiation protection. It is a private association of experts, who are elected on purely scientific grounds and who are independent of any political or commercial interests. The ICRP recognizes its responsibility to other professional groups and its obligation to provide guidance within the field of radiation protection as a whole. The ICRP issues periodically recommendations on radiation protection which are continually revised to cover

new knowledge concerning the effects of ionizing radiations and the developments in many fields of science and technology. However, as the ICRP does not have the institutional powers to implement its recommendations, they are formulated in such a way as to permit their adoption by national authorities and competent international organisations.

The underlying philosophy of the ICRP system for the limitation of radiation doses to which particular categories of individuals or the population generally may be exposed consists of the control of individual risks through specified limits, optimisation of protection measures and justification of all practices involving exposure to radiation. The basic requirement is that all radiation exposures be as low as reasonably achievable - known as the ALARA principle (ICRP Publication 26, 1977) [1].

## 2. Application of the ICRP radiation protection system to intervention levels

The above-mentioned system applies to exposures resulting from radioactive sources under control (normal conditions). The source of exposure in an accident situation is out of control and therefore, protection of the public and workers cannot be sought by applying the same system of dose limitation as for controlled sources, however, the planning and procedures for such protection can be based on a conceptually similar approach. In other words, the basic principles of the ICRP protection system can be related to an accident situation as follows:

- i) any intervention should be justified, that is, the introduction of a protective measure should achieve more good than harm,
- ii) the level at which the intervention is introduced, and the level at which it is later withdrawn, should be optimised so that it will produce the maximum good;
- iii) the doses to individuals should not exceed levels judged as unacceptable.

An illustration of the link between the application of the ICRP principles to normal and accident conditions, respectively, is given in Table 1.

**Table 1**

---

	Normal case Source under control	Accident Source out of control
1 Justification	Justification of a practice	Justification of a protective measure
2. Optimisation of protection	Choice of the "best" protection option	Choice of the "best" intervention level and the most beneficial combination of protective measures
3 Constraints on individual risk	Dose limits for workers and for the public	The radiological risk for the individual should be kept below unacceptable levels

---

The ICRP has currently established a small Task Group to revise ICRP Publication 40 - Protection of the Public in the Event of Major Radiation Accidents: Principles for Planning [2] The Task Group has also been given the responsibility of drafting revisions of the ICRP's Basic Recommendations and this work is in progress

### 3. Intervention criteria

The Revised Basic Safety Standards for Radiation Protection (IAEA Safety Series No 9, 1982 Edition) [3] jointly sponsored by IAEA, NEA, WHO and the International Labour Office (ILO) recognised two distinct conditions of exposure to radiation that in which the occurrence is foreseen and can be limited by control of the source and the system of dose limitation, i.e. normal exposure conditions as explained above, and that in which the source is uncontrolled so that any subsequent exposure can only be limited in magnitude by remedial action, if at all, i.e. abnormal exposure conditions. The steps to be taken in that context are termed intervention.

Intervention levels are quantitative values (e.g. dose, radionuclide concentration) used as a threshold for initiating countermeasures. Primary intervention levels (PILs) are specified in terms of projected dose to individuals over a given period of time. Secondary, or derived intervention levels (DILs) are normally specified as the concentration of activity of a given radionuclide within a given environmental matrix or foodstuff which, on the basis of specific assumptions on transfers to humans, corresponds to a dose to individuals equivalent to the primary intervention level. In this way, DILs can be compared directly to measurements of activity levels in the environment or foodstuffs and used to provide a quick determination of the need for intervention.

When establishing intervention criteria a variety of factors must be taken into account, in particular:

- a) the nature of the accident;
- b) international guidance on the subject,
- c) methodologies and parameter assumptions used in accident impact assessment and development of DILs,
- d) the role of non-radiological factors in the decision-making process (i.e. social, political and economic considerations),
- e) the capability of the public authorities for communicating the appropriate information and public understanding and acceptance of emergency measures;
- f) international trade in foodstuffs

### III. WORK IN INTERNATIONAL ORGANISATIONS

Prior to the accident at Chernobyl, significant work had been undertaken by several international organisations (e.g. ICRP, IAEA, CEC, WHO) to develop an international consensus on criteria and measures for protection of the public in the event of a nuclear accident

This resulted in the development of a set of recommendations providing a basis for accident response. In particular, ICRP 40, already mentioned, gives guidance on intervention levels. Following the Chernobyl accident, those organisations, including NEA, undertook revisions and updatings of their recommendations or directives, as the case may be, in close co-operation

All international organisations are in agreement on the need for the establishment of intervention levels of dose (ILs) as the reference point for decisions on implementing protective measures. It is acknowledged that the risks, difficulties and socio-economic disruptions that are associated with the implementation of the various interventions vary widely in relation to the particular protective measures, and thus the level of dose at which a given measure should be introduced is considered to be influenced by such considerations, as well as by other national and site-specific factors

The work undertaken by IAEA and NEA covers the wide field of principles for intervention for protecting the public in case of a nuclear accident while that of the CEC, to a great extent, and that of WHO and FAO focusses on intervention levels with respect to foodstuffs. The following paragraphs will describe these activities, their status and legal form.

## 1. The International Atomic Energy Agency (IAEA)

Article III A.6 of the Statute of the IAEA provides that it is authorised: "To establish or adopt standards of safety for protection of health and minimisation of danger to life and property and to provide for the application of these standards to its own operations as well as to operations making use of materials, services .." made available by it or under its control.

Accordingly, over the years, the IAEA has issued a number of expert guides for specific applications in the radiation protection field, one of the latest dealing with intervention levels

Just before the accident at Chernobyl, the IAEA completed a Guide on DILs for radiological emergencies. This Guide, published in 1986 as Safety Series No 81 [4], was reviewed by an IAEA Advisory Group in February 1987 in the light of experience gained from the accident. The Group concluded that although the basic principles for protection of the public in the event of a nuclear accident or radiological emergencies as set out in IAEA Safety Series No 72 [5] remained valid, further guidance was necessary, especially in the context of intervention associated with an accident having an impact over long distances and large areas, and extending over a long period of time. Initial conclusions and recommendations of the Advisory Group were published as an interim report "Revised Guidance on the Principles for Establishing Intervention Levels for Protection of the Public in the Event of a Nuclear Accident or Radiological Emergency", TECDOC 473. This report was prepared for use in conjunction with the guidance currently presented in Safety Series No. 72

Work is continuing on the revision of Safety Series No 72 and further progress is being made on reviewing and refining the principles and concepts for the radiation protection of the public in the event of a nuclear accident within the context of a more unified approach to the basic radiological protection criteria that should apply for a variety of unanticipated situations in which the conditions of exposure cannot be planned in advance. These situations, sometimes called "de facto" situations, include exposures that may be incurred under post-accident conditions. The main difference between Safety Series No 72 and the revision lies in the approach to the problem of setting intervention levels. While the principles already included the recognition that social disruption was a factor in setting intervention levels, the practical guidance, including the values for the intervention levels, was based purely on radiation protection considerations. Now, the new guidance proposes to set the principles in a different way, fully taking into account, inter alia, social, economic and political factors when setting intervention levels

This work suggests in particular that to be most effective, intervention levels should be developed specifically for the circumstances of interest. This need for specificity and the potential variability of intervention levels with the circumstances affect the degree to which broadly applicable quantitative guidance can be established. The report should provide indicative guidance on intervention levels for five measures, i.e. sheltering, issue of stable iodine, evacuation, relocation and food restrictions. Levels which are somewhat related to the intervention levels

will be those established by the guideline levels for radionuclide contamination of foods moving in international trade which were adopted in 1989 by the FAO/WHO Codex Alimentarius Commission (see under III 6 below)

## 2. OECD Nuclear Energy Agency (NEA)

Article 8(a)(1) of the Statute of NEA provides that it shall "Contribute to the promotion, by the responsible national authorities, of the protection of workers and the public against the hazards of ionizing radiations and of the preservation of the environment"

Over the years, NEA has published a series of recommendations and guides on radiation protection in the different applications of nuclear energy

Following the Chernobyl accident, NEA undertook an assessment of its radiological impact and a critical review of the emergency response in Member countries under the aegis of its Committee on Radiation Protection and Public Health (CRPPH). These findings were published by the OECD/NEA in 1987 in "The Radiological Impact of the Chernobyl Accident in OECD Countries" [6]. Furthermore, also under the aegis of the CRPPH, a critical review was made of the radiological principles and procedures used to establish and apply intervention criteria for protection of the public in the event of a nuclear accident. This report "Nuclear Accidents - Intervention Levels for Protection of the Public" prepared by an Expert Group on the subject was published in 1989 [7]. The report provides guidance on specific questions related to emergency response planning, identifying areas where expansion or clarification is needed so as to provide more comprehensive and harmonized advice and a clearer explanation of the rationale for the recommended intervention criteria and protective measures. The Expert Group concluded that the problems most relevant to the application of intervention levels and derived intervention levels primarily involve

- the need for additional clarification or expansion of international guidance on emergency response planning and intervention criteria,
- the need for harmonization of methodologies and parameter assumptions used in accident impact assessments and the development of derived intervention levels (DILs),
- the need for specific guidance on control levels for international trade in food (see below under EC and WHO/FAO)

Following publication of that report, the CRPPH noted that significant developments were still under way in other international organisations and that some of the issues identified by the above Expert Group had not yet been resolved. The CRPPH therefore set up a Task Group to provide additional guidance on several specific, still unresolved, issues in the light of those developments related to harmonization of intervention criteria. A report on this work "Protection of the Population in the Event of a Nuclear Accident - Principles for Intervention" is to be published in early Summer 1990 [8].

The report recommends that the principles for intervention should be seen as generally applicable to all situations in all circumstances,



irrespective of time and distance from the source of the accident. In the management of accidents, it explains that there are two distinct phases in which optimisation of protective measures should be considered. Prior to accidents, a generic optimisation should be studied on the basis of a generic accident scenario calculation and should result for each protective measure and each selected scenario, in an optimised generic intervention level (IL) which is meant to be the first criterion for action to be used immediately and for a short time after occurrence of the accident. In a real accident situation a more precise and specific optimisation analysis, based on real data, can be carried out and should result in a "specific" IL for each protective measure. The Task Group suggests that an international consensus be reached on generic accident scenarios and calculation methods for the derivation of generic ILs to contribute to minimise discrepancies between the countries in establishing their own ILs. The range of potential interventions should be constrained, as far as possible, by an upper and lower boundary (UB and LB) of individual dose. Criteria for the establishment of these boundaries are suggested in the report.

### 3. The European Communities (EC)

Article 2(b) of the Treaty establishing the European Atomic Energy Community gives it the task of establishing uniform safety standards to protect the health of workers and the general public. Article 30 provides that "Basic standards for protection ... against the dangers arising from ionizing radiations shall be laid down within the Community. Basic standards shall mean

- a) maximum permissible doses compatible with adequate safety,
- b) maximum permissible levels of exposure and contamination,
- c) basic principles governing the medical supervision of workers".

Under Article 31, these "basic standards shall be evolved by the Commission" while Article 33 specifies that "Each Member State shall lay down the appropriate provisions, whether by legislation, regulation or administrative action to ensure compliance with the basic standards that are established"

Article 155 of the Treaty setting up the European Economic Community provides that the Commission may make recommendations to fulfil the object of the Treaty, has the right of legislative action and exercises the powers conferred on it by the Council of Ministers "for the implementation of the rules issued by the latter"

The Council and the Commission of the European Communities took a number of regulatory actions following the Chernobyl accident with reference to maximum permitted levels of radioactive contamination of foodstuffs and animal feed and on conditions governing imports of agricultural products.

On 12th May 1986, the Council of Ministers confirmed that Member States had undertaken to inform the Commission on the evolution of radioactivity within their territory and the health measures applicable. The Council then

requested the Commission to prepare proposals supplementing the basic safety standards and to propose a procedure for coping with such emergency situations in the future. Meanwhile, Council Regulation (EEC) No 1388/86 issued on that day suspended import of certain agricultural products originating in certain third countries (OJEC No. L 127 of 13th May 1986).

It should be noted that the Commission had already taken action on 6th May 1986 by recommending to Member States to co-ordinate national measures taken in respect of agricultural products as a result of radioactive fallout from the Soviet Union (86/156/EEC, OJEC No. L 118 of 7th May 1986). This was followed by a Commission Decision of 7th May 1986 suspending the inclusion of certain countries on the list of third countries from which import of bovine meat, etc. was authorised (86/157/EEC, OJEC No. L 120 of 8th May 1986).

Those recommendations and decisions were made for a limited time and replaced by Council Regulation 1707/86 of 30th May 1986 on the conditions governing imports of agricultural products originating in third countries, extended until 30th October 1987 [9]. The Regulation laid down maximum permitted contamination levels and was applied by all Member States.

This Regulation was followed by a series of Regulations dealing with intervention levels which are listed in the Notes and References [10, 11, 12, 13, 14].

The Annex to Regulation 3954/87 laying down maximum permitted levels of radioactive contamination of foodstuffs and feedingstuffs contains a table giving these levels. Regulation 2218/89 completed the table, which is reproduced below, as amended; Regulation (Euratom) No 770/90 of 29th March 1990 fixes those levels for feedingstuffs [11].

**Table 2**

Maximum Permitted Levels for Foodstuffs and Feedingstuffs (Bq/kg)  
[EC Regulation 2218/89]

	Foodstuffs <sup>1</sup>				Feeding stuffs <sup>2</sup>
	Baby foods <sup>3</sup>	Dairy Produce <sup>4</sup>	Other foodstuffs except minor foodstuffs <sup>5</sup>	Liquid food- stuffs <sup>6</sup>	
Isotopes of strontium, notably Sr-90	75	125	750	125	
Isotopes of iodine, notably I-131	150	500	2 000	500	
Alpha-emitting isotopes of plutonium and transplutonium elements, notably Pu-239, Am-241	1	20	80	20	
All other nuclides of half-life greater than 10 days, notably Cs-134, Cs-137 <sup>7</sup>	400	1 000	1 250	1 000	

- 1 The level applicable to concentrated or dried products is calculated on the basis of the reconstituted product as ready for consumption. Member States may make recommendations concerning the diluting conditions in order to ensure that the maximum permitted levels laid down in this Regulation are observed.
- 2 Maximum permitted levels for feedingstuffs will be defined in accordance with Article 7, since such levels are intended to contribute to the observance of the permitted maximum levels for foodstuffs, do not alone guarantee such observance in all circumstances and do not lessen the requirement for monitoring levels in animal products for human consumption\*.
- 3 Baby foods are defined as those foodstuffs intended for the feeding of infants during the first four to six months of life, which meet, in themselves, the nutritional requirements of this category of person and are put up for retail sale in packages which are clearly identified and labelled "food preparation for infants".
- 4 Dairy produce is defined as those products falling within the following CN codes including, where appropriate, any adjustments which might be made to them later: 0401, 0402 (except 0402 29 11).
- 5 Minor foodstuffs and the corresponding levels to be applied to them will be defined in accordance with Article 7.
- 6 Liquid foodstuffs as defined in the heading 2009 and in chapter 22 of the combined nomenclature. Values are calculated taking into account consumption of tap-water and the same values should be applied to drinking water supplies at the discretion of competent authorities in Member States.
- 7 Carbon 14, tritium and potassium 40 are not included in this group.

\* These levels have since been defined in the table annexed to Commission Regulation (Euratom) No 770/90, reproduced in the "Texts" Chapter of this issue of the Bulletin.

Following this series of Regulations, the Council issued a Directive to Member States on 27th November 1989 (89/618/Euratom, OJEC No L 357 of 7th December 1989) on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency [15]. The Directive defines, at Community level, common objectives with regard to measures and procedures for informing the general public following an accident involving a "significant release of radioactive material" and "abnormal levels of radioactivity". The latter terms are understood to cover situations likely to result in members of the public being exposed to doses in excess of those prescribed in the basic safety standards.

Information to be provided in case of a radiological emergency includes advice on protection which might cover restrictions on the consumption of certain foodstuffs likely to be contaminated, rules on decontamination, evacuation arrangements.

Member States must take the measures to comply with the Directive within two years of its adoption.

The Directive is reproduced in the "Texts" Chapter of this issue of the Bulletin.

#### 4. World Health Organisation (WHO)

The Constitution of WHO (Article 1) provides that its objective is "the attainment by all peoples of the highest possible level of health". To fulfil this objective Article 2 specifies that its functions will be

- "h) to promote, in co-operation with other specialised agencies where necessary, the prevention of accidental injuries,
- 1) to promote, in co-operation with other specialised agencies where necessary, the improvement of nutrition, sanitation and other aspects of environmental hygiene, . .
- u) to develop, establish and promote international standards with respect to food . .".

Prior to the Chernobyl accident, WHO fulfilled its responsibilities by prescribing the standards of safety which should be applied to safeguard public health from contamination of the environment. The months following the accident clearly demonstrated to it the need to establish international guideline values for derived intervention levels; the WHO guidelines were developed in response to this need, and to facilitate contingency planning by Member States to deal with the accidental release of radionuclides. WHO emphasises that such guideline values are only a part of the overall emergency plan and that it is equally important to be able to sample and analyse food in order to take the appropriate decisions to protect public health.

WHO initiated its work on derived intervention levels in September 1986. It was decided then that WHO would develop and issue guidelines which would (1) outline an agreed procedure for the development of national derived intervention levels, and (11) provide a set of general WHO

guideline values for application during emergencies by those countries which had not yet developed their own levels. It was further proposed that the guidelines would deal only with contamination of foodstuffs and drinking-water. In November 1986, a meeting was convened with the participation of representatives of IAEA, FAO, the CEC, OECD and WHO to discuss the WHO proposal in relation to the work of the other agencies and to identify areas where collaboration would be useful.

The guidelines include an optimisation technique developed by the International Commission on Radiological Protection for evaluation of health detriment and cost of remedial measures when the decision to intervene is being considered. In situations where the cost of intervention is low, the optimisation technique may indicate that remedial action be introduced above the 5 mSv dose. The optimisation procedure was also used to verify, in a general sense, that the choice of 5 mSv as the reference level of dose was realistic in economic terms.

Once a decision has been taken on the reference level of dose (5 mSv), this is translated into the corresponding radionuclide concentration in foods (Bq/kg). This requires knowledge of average food consumption patterns within the country or region of concern. The information is expressed as annual consumption according to major food groups such as cereals, vegetables, meat, etc. In calculating WHO guideline values, global information on food consumption patterns was compiled, data from approximately 130 countries provided the basis for establishing eight different regional patterns. On the basis of the maximum regional consumption in the different food groups, a hypothetical global diet was constructed for foods consumed in quantities greater than 20 kg per person per year. This value was chosen as the cut-off level, since extremely high contamination is necessary for foods consumed in lesser quantities to reach the reference level dose. For the calculation of WHO guideline values for derived intervention levels the consumption of 550 kg of food and 700 litres of drinking-water per person per year was assumed.

The guideline values so calculated are given in table 3 below (reproduced from Derived Intervention Levels for Radionuclides in Food, WHO, 1988) [16]

Table 3

Radionuclide	Cereals	Roots and tubers	Vegetables	Fruit	Meat	Milk	Fish	Drinking-water
Plutonium-239 ( $10^{-6}$ Sv/Bq)	35	50	60	70	100	45	350	7
Strontium-90	3 500	5 000	8 000	7 000	10 000	4 500	35 000	700
Iodine-131								
Caesium-134								
Caesium-137 ( $10^{-8}$ Sv/Bq)								

The WHO guidelines are intended to serve as a guide to Member States in introducing control measures to protect public health following the accidental contamination of food and drinking-water by radionuclides. They are applicable to the "far field" where radiation exposure from the ingestion of contaminated food is likely to be of more concern than that from ground contamination or inhalation. The methodology employed is intended as a guide to countries in the process of developing national derived intervention levels, and the guideline values are for use in emergencies by countries which have not developed their own. WHO hopes that the use of the methodology and guideline values will assist in achieving a measure of uniformity among countries regarding derived intervention levels.

#### **5. Food and Agriculture Organisation (FAO)**

The Constitution of FAO provides (Article I.1) that it "shall collect, analyse, interpret and disseminate information relating to nutrition" and (Article I.2) that it "shall promote and where appropriate recommend national and international action with respect to ... the improvement of the processing, marketing and distribution of food and agricultural products".

As already mentioned, following the Chernobyl accident, there was concern over the safety of food moving in international trade and FAO convened an expert consultation on recommended limits for radionuclide contamination of food. The recommendations of this expert consultation were transmitted in January 1987 to all FAO Member countries, United Nations agencies and other interested parties for use as criterion guidance in controlling food in international trade until all consultations and final recommendations were available from FAO, WHO and IAEA [17].

#### **6. FAO/WHO Codex Alimentarius Commission**

Following completion of the WHO above-mentioned Derived Intervention Levels for Radionuclides in Foods, FAO/WHO jointly proposed the adoption of levels for radionuclide contamination of food in international trade following an accidental nuclear release to the FAO/WHO Codex Alimentarius Commission, established in 1965 to promote harmonisation of international trade through the preparation of internationally agreed food standards. The Commission adopted these proposed guideline levels at its 18th Session in July 1989. They were published as "Guideline Levels for Radionuclides in Food following Accidental Nuclear Contamination for Use in International Trade" [18]. The Commission specified that these levels remain applicable for one year following a nuclear accident.

The Commission also adopted, as an interim measure, the following definition of Guideline Level:

"Guideline levels are intended for use in regulating foods moving in international trade. When the Guideline levels are exceeded, governments should decide whether and under what circumstances, the food should be distributed within their territory or jurisdiction."

## 7. Summary Conclusions

The Statutory obligations of the intergovernmental organisations discussed include the protection of public health. They fulfil this objective by adopting basic safety radiation protection standards (IAEA, NEA, WHO, EEC, ILO), by contributing to promotion of protection by national authorities, by submitting recommendations as a basis for harmonization, by promoting, in co-operation where necessary, the improvement of nutrition and by developing international standards with respect to food (WHO), and finally, by promoting and recommending national and international action concerning improvement of food (FAO). In the establishment of intervention levels, each organisation clearly stated the purpose and scope of its work which may be summarised as follows

IAEA Principles are provided which are to be applied in accident situations, including protection of the public, controlling exposure of workers responding to an accident immediately, and intervention levels. The purpose of this guidance is to assist the competent national authorities in emergency response planning

NEA The considerations and concepts provided refer to a proposed new accident management system and a general scheme for its application is outlined, covering reference groups, exposure pathways in the short and the long-term. This guidance should be seen as a contribution to the general international debate for improving and harmonising international and national criteria in the event of a nuclear accident

EC The European Community Regulations cover two aspects of radiation protection. The first series deals exclusively with radioactive contamination of food, drinking water and animal feed while the Directive of 27th November 1989 is more general, providing for common objectives on measures and procedures for informing the public in case of a nuclear accident.

WHO Provides a Guide to Member States in introducing control measures to protect public health following the accidental contamination of food and drinking-water by radionuclides. They are applicable to the "far field" where radiation exposure from ingestion of contaminated food is likely to be a greater concern than that from ground contamination or inhalation

FAO/WHO Recommendations to the Codex Alimentarius Commission which develop values that can be readily applied to future accidents under existing food control legislation.

At this stage, only the European Community Regulations are binding on its Member States, the period given for their mandatory implementation being set out therein. As seen from the above, the other organisations, as far as intervention levels are concerned, simply make recommendations to help national authorities to set their own intervention levels and give guidance on setting them prior to an accident and after it has occurred.

All the work undertaken in the area of intervention levels, whether for food or more generally, is based on the ICRP Recommendations. Also, the organisations concerned participated in each other's work, thus ensuring co-ordination of their efforts to the extent possible. Consequently, any

existing differences are of a minor nature, the overriding basic principles remaining the same.

#### IV. NATIONAL PREVENTIVE MEASURES AND REGULATORY ASPECTS

Prior to the Chernobyl accident, several OECD Member countries, for example the United Kingdom [19, 20], had established derived intervention levels (DILs) for environmental media and food to be applied in case of an accident at a national nuclear installation. Other countries had developed levels for the control of radioactive contamination in food. Still other countries had not developed levels, but did so, according to varying technical criteria, following the accident. The OECD/NEA publication "Nuclear Accidents - Intervention Levels for Protection of the Public", 1989, gives an illustration of the response to the accident by OECD Member countries by providing tables of the intervention criteria applied by those countries at the time.

To complete the information on national intervention levels it might be useful to briefly refer to the measures taken by the public authorities to mitigate the damage (which was essentially of an economic nature) suffered in some OECD countries following the radioactive release and to regulatory measures taken in certain instances. The three most important radionuclides released during the Chernobyl accident were iodine-131 and the two caesium isotopes, caesium-134 and caesium-137. Once deposited on the ground, these nuclides are quickly incorporated into foodchains. Iodine-131 has a short half-life (8.5 days) and the dose from all pathways was almost completely delivered within weeks of the accident. The caesium dose on the other hand is delivered at a decreasing rate over a period of many years (caesium-134 has a half-life of 2.06 years and caesium-137 30 years). Therefore, the levels of deposition of these three nuclides gave a good indication of the radiological impact of the release on the Member countries [21, 22].

In Austria, grasslands were the most affected, with significant contamination of early hay and grass silage. Other less affected or unaffected fodder was substituted for the contaminated hay to avoid the insertion of radioactive substances by cattle. Also, the spreading of sewage sludge produced on agricultural land between May and July 1986 was prohibited.

In Belgium, the measures taken mainly concerned control of imports of agricultural products. Thus, an Order of 3rd November 1987 implemented at national level the European Community Regulation No 1707/86 on conditions for the import of agricultural products from non-European Community States after the Chernobyl accident, which had been extended to 30th October 1987. The Order remained in force until adoption of Council Resolution EEC No 3955/87 [23].

In the Federal Republic of Germany, radioactive contamination affected fresh leafy vegetables and grass, milk-producing cattle was kept from grazing, consumption of milk and other foodstuffs was supervised and the intervention levels set by the states (Länder) led to a change in consumers' diets. Also, certain imports were restricted.



On 19th December 1986, an Act was adopted to provide for the preventive protection of the population against radiation. Its purpose is to keep the exposure of persons to radiation and radioactive contamination to the environment to a minimum in case of an occurrence with radiological consequences. The Act distributes the administrative powers for such action (including the setting of intervention levels) between the Federal and the state authorities [24]. Further to the Act, an Ordinance was issued on 30th October 1987 adopting nationally the intervention levels of European Community Regulation No. 1707/86 on agricultural imports from third countries (see Belgium above) due to expire on that date. The Ordinance also extended to imports from Community Member States and expired when the above-mentioned Community Regulation No. 3955/87 on agricultural imports entered into force [25].

In Greece economic damage was suffered due to lost sheep and goat cheese production.

In Italy, between 2nd and 23rd May 1986 several Orders were passed by the Ministry of Health prohibiting temporarily the sale of fresh leafy vegetables and provision of fresh milk to children under ten and pregnant women, and advising on disposal and destruction methods for contaminated products.

The intervention levels considered, in addition to European Community Regulation No. 1707/86 were based on a Decree of 2nd February 1971 establishing maximum permitted doses and concentrations in respect of radiation [26].

In the Netherlands, measures included temporary prohibition of outdoor grazing of dairy cattle, advice to refrain from consuming fresh spinach, a ban on sheep's milk consumption and manufacture of sheep's cheese for five weeks following the accident, and a requirement that animal thyroid glands be destroyed after slaughter. A Decision of the Ministry of Agriculture and Fisheries on 7th May 1986 banned the sale of the above produce.

In Norway, a small area of vegetable crops was affected. The most important impact was by caesium deposition on grazing meadows, subsequently affecting sheep and reindeer. Sale of reindeer meat was prohibited in southern and central Norway.

In Sweden, restrictions and prohibitions were applied to meat and milk production, as well as grasslands, being affected by air-borne contamination, notably caesium 137, which involved about 125,000 cows on 6,000 farms. In addition, 210,000 hectares of hay were contaminated. Also reindeer herds suffer from contamination as they continue to consume slow growing contaminated lichens.

In Switzerland, certain sectors in agriculture and fisheries sustained fairly severe economic damage, in particular, fishing was prohibited in Lake Lugano by Ordinance of 3rd September 1986 [27]. An Order and Ordinance were adopted on 18th December 1987 and 13th April 1988 providing for Government indemnification of farmers and fishermen having suffered economic losses due to Government restrictions following the Chernobyl accident [28].

## V. THIRD PARTY LIABILITY ASPECTS

As pointed out earlier, intervention levels are used as reference points for administrative decisions that implement preventive measures against radioactive contamination of the population and, in particular, those concerning consumption and distribution of and trade in foodstuffs. Application of intervention levels is likely to entail high costs and economic losses both for the persons affected by those measures and for the authorities. Moreover, as demonstrated by the Chernobyl accident, intervention costs and the resulting economic losses may well make up a considerable part of the damage and the claims for compensation in relation to the nuclear accident. It would be apt, therefore, to examine whether damage linked to intervention levels and their implementation should be considered as "nuclear damage" within the meaning of the international Conventions applicable and accordingly, be covered by the nuclear operator's third party liability.

### 1. The concept of nuclear damage and the causal link

It should be noted that neither the Paris Convention on Third Party Liability in the Field of Nuclear Energy nor the Vienna Convention on Civil Liability for Nuclear Damage specifically reply to that question. Consequently, only the court, competent under the Conventions, may determine whether or not, in accordance with its national legislation, claims for compensation linked to this type of damage are admissible. Before the accident at Chernobyl, studies had already been undertaken within the OECD Nuclear Energy Agency (NEA) to define more precisely in the context of the Paris Convention the concept of nuclear damage, in particular, that of damage to property. At the time, the legal experts were somewhat reticent about including preventive measures in the operator's third party liability as they considered that if the public authorities intervened, it might sever the causal link between the nuclear accident and the resulting damage.

That accident revived an interest in the question because most of the economic damage suffered by European countries due to the accident was closely connected with the preventive measures taken by the public authorities concerned and was, therefore, attributable to intervention levels (see Part IV above). The analysis by the NEA Group of Governmental Experts on Nuclear Third Party Liability concluded that damage arising from preventive measures should be covered by the nuclear operator's third party liability provided that a direct causal link can be established. And, for this purpose, an uninterrupted chain of causality should be reconstituted, starting from the accident right up to the damage and encompassing the decision based on intervention levels, which should itself be warranted by the circumstances of the accident. If these conditions were met, the national courts could then consider that the damage has been caused directly by the nuclear accident and not by decisions of the national authorities connected with intervention levels and the measures taken subsequently for their implementation.

Also, if intervention levels are considered as a threshold beyond which countermeasures must be taken, the competent judge could take the view that not only the preventive measures taken by the public authorities were

justified, but also certain voluntary restrictions in economic activities decided individually and based on these same levels. If this were acknowledged, loss of income resulting from individual initiatives and not from administrative measures imposing restrictions on commercial and agricultural activities, could give a right to compensation under the third party liability regime if the judge determines that those restrictions accord with the intervention levels fixed by the State.

## 2. The criterion of "reasonableness"

The main question concerning the link between a nuclear accident and the subsequent administrative measures is the reasonable character of the latter or, to go even further, the need for them in connection with the accident. In the event of a nuclear accident, it may be assumed that the national courts would decide on this matter on a case-by-case basis, making a determination based on the facts available when the administrative decision was taken. Nevertheless, their determinations should be founded largely on the technical data from which those measures stemmed, namely, the intervention levels set by the competent public authorities.

As long as claims are restricted to damage suffered on the national territory, there should be no particular problem because, in general, courts do not question the advisability of the administrative measures legally taken by the competent authority. On the other hand, regarding an accident with effects in several countries, the lack of standardisation of the intervention levels set by the different countries could give rise to various difficulties.

In accordance with both the Paris and Vienna Conventions (Articles 13 and XI respectively), there can only be one national court competent to rule on damage resulting from a nuclear accident. If a transboundary accident occurs, that court may have to decide on the eligibility of the economic loss suffered in another Contracting Party's territory due to the intervention levels fixed by the authorities of that other Party. If the levels involved are lower than those of the State whose court is competent to rule on the damage caused by the nuclear accident, that court might well contest the reasonableness of those measures and refuse to grant compensation for all types of damage regarding which its own nationals could obtain nothing on the basis of the intervention levels in force in that country. On the other hand, the competent court might decide to accept any claim based on the respective national standards and intervention levels. In that case, it would compensate the damage suffered in the country having set lower intervention levels but would refuse to compensate similar damage suffered on its own territory because the higher intervention levels did not warrant the individual preventive measures having generated the damage. This approach would conform to the provisions of the Paris and the Vienna Conventions whereby the conditions for compensation of nuclear damage are fixed by national law but could be seen as a direct infringement of the principle of non-discrimination between the victims. This problem highlights the need for harmonizing national policies in this field.

### **3. State intervention in the compensation process**

Compensation of damage linked to preventive measures based on intervention levels would inevitably increase the total amount of the indemnities to be paid and also the money available to cover the nuclear operator's third party liability would be used up more quickly. Where national legislation so provides, State intervention to supplement the operator's financial security would also come into play earlier. In the event of an accident occurring on the territory of a Contracting Party to the Brussels Supplementary Convention, the public funds (provided for by Article 3 of that Convention) would therefore be called for at an earlier stage. The proper operation of the Convention's mechanism might consequently be affected if all the contributing Contracting Parties have not agreed on levels warranting action by the national authorities and specific preventive measures being taken.

Contracting Parties which consider that the intervention levels applied by the Party whose courts are competent are set too low would nevertheless be invited by that Party, in accordance with the Brussels Supplementary Convention [Article 10(b)], to provide the public funds required when the funds available from the nuclear operator's financial security are used up. The undertakings given under the Brussels Supplementary Convention do not allow the Contracting Parties to refuse to contribute on the grounds that they object to the basis for the courts' allocation of compensation. In effect, the decisions of the competent court on the payment of indemnities from public funds are directly recognised by the other Contracting Parties and become enforceable in their territories; the merits of the case cannot be the subject of further proceedings [Article 13(d), Paris Convention and Article 10(d), Brussels Supplementary Convention].

However, any dispute concerning the reasonableness of intervention levels, related measures and the merits of compensation granted by the courts could create a political climate affecting the proper operation of the Convention. As a last resort, Contracting Parties could even contest an interpretation of the concept of damage covering preventive measures.

### **4. Advantages of harmonizing intervention levels from the viewpoint of the nuclear third party liability regime**

The harmonization of national intervention levels according to a system of standards widely accepted internationally would undoubtedly be useful in many respects in the context of nuclear third party liability. In the first place, this would make it easier to establish legal grounds regarding the reasonableness of preventive measures taken in connection with an accident. The cost of those measures and the related damage could then be considered as nuclear damage and compensated under the third party liability regime without other proof being required to establish a direct causal link between the damage and the accident.

However, inclusion of the costs incurred by the implementation of intervention measures in the overall amount of compensation could jeopardise the possibility of totally indemnifying every victim. For the same reasons,

this might also compromise the chances of belated actions for compensation (mainly for delayed personal injury)

On the other hand, harmonized intervention levels could give clearer additional indications on the priority to be accorded to each head of damage and, on this basis, the national judge would be better able to establish a rank of priority concerning the different heads of damage in cases where claims exceeded the funds available for their compensation

In conclusion, harmonization of intervention levels in all the Contracting Parties could contribute to a better protection of victims and to optimising the system of compensation set up by the Paris and Brussels Conventions.

#### NOTES AND REFERENCES

- [1] ICRP, Recommendations of the International Commission on Radiological Protection ICRP Publication 26, Annals of the ICRP, 1(3), Pergamon Press, Oxford, 1977
- [2] ICRP, Recommendations of the International Commission on Radiological Protection ICRP Publication 40, Annals of the ICRP, 14(2), Pergamon Press, Oxford, 1984
- [3] IAEA, Basic safety standards for radiation protection. 1982 edition. Report jointly sponsored by the IAEA, ILO, OECD/NEA and WHO Safety Series No 9, IAEA, Vienna, 1982
- [4] IAEA, Derived intervention levels for application in controlling radiation doses to the public in the event of a nuclear accident or radiological emergency principles, procedures and data Safety Series No 81, IAEA, Vienna, 1986
- [5] IAEA, Principles for establishing intervention levels for the protection of the public in the event of a nuclear accident or radiological emergency Safety Series No 72, IAEA, Vienna, 1985
- [6] NEA, The radiological impact of the Chernobyl accident in OECD countries OECD/NEA, Paris, 1987
- [7] NEA, Nuclear accidents - intervention levels for protection of the public OECD/NEA, Paris, 1989
- [8] NEA, Protection of the population in the event of a nuclear accident - principles for intervention OECD/NEA, Paris, 1990
- [9] EC, Council Regulation (EEC) No 1707/86 on conditions governing imports of agricultural products originating from third countries following the accident at the Chernobyl nuclear power station, Official

- [10] EC, Derived reference levels as a basis for the control of foodstuffs following a nuclear accident: a recommendation from the Group of Experts convened under Article 31 of the Euratom Treaty OJEC No C 174, of 2nd July 1987. EC, Radiological protection criteria for controlling doses to the public in the event of accidental releases of radioactive material. A guide on emergency reference levels of dose from the Group of Experts convened under Article 31 of the Euratom Treaty. CEC, Luxembourg, 1982
- [11] EC, Council Regulation (Euratom) No 3954/87 of 22nd December 1987, laying down maximum permitted levels of radioactive contamination of foodstuffs and feedingstuffs following a nuclear accident or any other case of radiological emergency. OJEC, No L 371 of 30th December 1987 Council Regulation (Euratom) No 2218/89 of 18th July 1989 amending Regulation No. 3954/87, OJEC No L 211 of 22nd July 1989 Commission Regulation (Euratom) No. 770/90 of 29th March 1990 laying down maximum permitted levels of radioactive contamination of feedingstuffs following a nuclear accident, OJEC No L 83 of 30th March 1990 [reproduced in Nuclear Law Bulletin Nos. 41, 44, 45]
- [12] EC, Council Regulation (EEC) No. 3955/87 of 22nd December 1987 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station. OJEC No. L 371, 30th December 1987 [reproduced in Nuclear Law Bulletin No. 41] Commission Regulation (EEC) 1983/88 of 5th July 1988 - rules for application of Regulation 3955/87 above, OJEC No L 174 of 6th July 1988. EC Council Regulation (EEC) No 4003/89 of 21st December 1989, amending Regulation 3955/87, OJEC No L 382 of 30th December 1989. Council Regulation (EEC) No 737/90 of 22nd March 1990 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station OJEC No L 82 of 29th March 1990 [reproduced in this issue of the Nuclear Law Bulletin]
- [13] EC, Commission Regulation (Euratom) 944/89 of 12th April 1989 laying down maximum permitted levels of contamination in minor foodstuffs following a nuclear accident or any other case of radiological emergency, OJEC No L 101 of 13th April 1989 [reproduced in Nuclear Law Bulletin No. 44].
- [14] EC, Council Regulation (EEC) 2219/89 of 18th July 1989 on the special conditions for exporting foodstuffs and feedingstuffs following a nuclear accident or any other case of radiological emergency, OJEC No L 211 of 22nd July 1989 [reproduced in Nuclear Law Bulletin No 44]
- [15] EC, Council Directive (89/618/Euratom) of 27th November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency, OJEC No. L 357 of 7th December 1989 [reproduced in this issue of the Nuclear Law Bulletin].

- [16] WHO, Derived intervention levels for radionuclides in food Guidelines for application after widespread radioactive contamination resulting from a major radiation accident WHO, Geneva, 1988
- [17] FAO, Report of the expert consultation on recommended limits for radionuclide contamination of foods, Rome, 1st-5th December 1986 FAO, Rome, 1987
- [18] Joint FAO/WHO Foods Standards Programme, Codex Alimentarius Commission, CONTAMINANTS. "Guideline Levels for Radionuclides in Food following Accidental Nuclear Contamination for Use in International Trade", Supplement 1 to CODEX ALIMENTARIUS, Vol XVII, Rome, 1989.
- [19] Linsley, G S., Crick, M J , Simmonds, J.R , and Haywood, S M , Derived emergency reference levels for the introduction of countermeasures in the early to intermediate phases of emergencies involving the release of radioactive materials to the atmosphere, NRPB, Report NRPB-DL10, HMSO, London, 1986.
- [20] Dunster, H.J., The place of optimisation in the setting of action levels for intervention following an accident. Paper presented at the CEC Scientific Seminar on Foodstuffs Intervention Levels Following a Nuclear Accident, Luxembourg, 27th-30th April 1987
- [21] Pelzer, N , Current problems of nuclear liability law - a German standpoint Nuclear Law Bulletin No 39, OECD/NEA, Paris, June 1987.
- [22] NEA, The accident at Chernobyl - economic damage and its compensation in Western Europe Nuclear Law Bulletin No 39, OECD/NEA, Paris, June 1987
- [23] Arrête ministériel du 3 novembre 1987 portant reglement en matiere de la contamination radioactive des produits agricoles, Moniteur belge, 6th November 1987
- [24] Gesetz zum vorsorgenden Schutz der Bevölkerung gegen Strahlenbelastung (Strahlenschutzvorsorgegesetz - StrVG), 19th December 1986, BGBl, 1986, I
- [25] Verordnung zur Strahlenschutzvorsorge bei infolge des Ereignisses von Tschernobyl radioaktiv stoffekontaminierten landwirtschaftlichen Erzeugnissen, 30th October 1987, Bundesanzeiger, 31st October 1987.
- [26] Decreto ministeriale 2 febbraio 1971 con cui sono stati determinati i valori delle dosi massime ammissibili e delle concentrazioni massime ammissibili, nonché dei valori dell'efficacia biologica relativa, per la popolazione nel suo insieme e per i gruppi particolari della popolazione ai fini della protezione contro i pericoli derivanti dalle radiazioni ionizzante, Gazzetta ufficiale della Repubblica italiana, 6th March 1971
- [27] Ordonnance du 30 septembre 1986 sur l'interdiction de la pêche dans le lac de Lugano, RO 1986

- [28] Arrête fédéral du 18 décembre 1987 et Ordonnance du 13 avril 1988 concernant les indemnités allouées par la Confédération à des personnes lésées par la catastrophe de Tchernobyl, RO 1988
- [29] Grunwald, J , The role of Euratom, Nuclear Energy Law After Chernobyl, Proceedings of a meeting of the International Bar Association, September 1987, International Law Association Series, Graham and Trotman and IBA, London, 1988.
- [30] Grunwald, J , Tchernobyl et les Communautés Européennes Aspects juridiques, Revue du Marché Commun n° 308, July 1987

## ANNEX

### EXPLANATION OF TERMS

- Absorbed Dose** Quantity of energy imparted by ionizing radiation to a unit mass of matter such as tissue. It is measured in grays (Gy), where 1 Gy equals 1 joule per kilogram. One Gy produces different biological effects on tissue depending on the type of radiation
- Activity** Quantity of a radionuclide It describes the rate at which spontaneous nuclear transformations (i.e. radioactive decay) occur in it It is measured in becquerels (Bq).
- ALARA** An acronym for "as low as reasonably achievable", a concept meaning that the design and use of sources, and the associated practices, should be such as to ensure that exposures are kept as low as is reasonably achievable, economic and social factors being taken into account
- Becquerel** One becquerel (Bq) corresponds to one disintegration per second of any radionuclide
- Contamination (radioactive)** The presence of a radioactive substance or substances in or on a material or in a location where they are undesirable or could be harmful
- Critical Group** A homogeneous group of the population which is representative of the more highly exposed individuals in that population exposed to a given source of radiation. May be synonymous with Reference Group
- Derived Intervention Level** The activity concentration in a given environmental medium (air, soil, water) or foodstuffs which, under certain assumptions, corresponds to a dose to individuals equal to the Primary Intervention Level
- Dose** A general term denoting a quantity of radiation It can be qualified as absorbed dose, dose equivalent, effective dose equivalent



**Exposure Pathways** The routes by which organisms can be exposed to external or internal irradiation

**Half-life (radioactive)** The time taken for the activity of a radioactive material to lose half its value by radioactive decay The biological half-life is the time taken for half of a substance to be eliminated from a tissue, an organ or the whole body The effective half-life is the time taken for a radioactive material in a living organism to be reduced to half of its original value by a combination of biological elimination and radioactive decay

**Intervention Level** The value of a quantity (dose, activity concentration) which, if exceeded or predicted to be exceeded in case of an accident, may require the application of a given protective action.

**Maximum Individual Dose** Average dose to the individuals of the critical group

**Non-Stochastic Effects** Radiation effects for which a threshold exists, above which the severity of the effect varies with the dose.

**Primary Intervention Level** Intervention level in terms of dose to individuals projected over a given period of time.

**Risk** For the purpose of radiological protection, the probability that a given individual will incur any given deleterious stochastic effect as a result of radiation exposure Also known as the product of the probability of occurrence of an accident and the magnitude of the consequences given that occurrence

**Sievert (Sv)** Is the unit of dose equivalent. One Sv produces the same biological effect irrespective of the type of radiation. One sievert also corresponds to one joule per kilogram

**Stochastic Effects** Radiation effects, the severity of which is independent of dose and the probability of which is assumed, by the ICRP, to be proportional to the dose without threshold, in the range of low doses of interest in radiation protection

# CASE LAW AND ADMINISTRATIVE DECISIONS

## CASE LAW

### ● *Japan*

#### HIGH COURT DECISION ON THE FUKUSHIMA II-1 NUCLEAR POWER PLANT JUSTIFYING SAFETY REVIEW (1990)

On 20th March 1990, the Sendai High Court rejected a request by 33 persons living near Unit 1 of the Fukushima II nuclear power plant of the Tokyo Electric Power Company (BWR, 1100 MW) for nullification of the government permit for installation of the reactor. This matter came before the High Court on appeal from the Fukushima District Court which had also rejected the request (see Nuclear Law Bulletin No. 34). This is the first judgment on the safety of a nuclear power plant in Japan since the Chernobyl accident in 1986.

The High Court ruled that the 33 plaintiffs, who lived within a radius of approximately fifty kilometres from the nuclear reactor facilities, had standing to bring the suit because, if the safety of those facilities was not secured, they could present a grave danger to the lives and health of the residents.

The plaintiffs claimed that the safety examination required by the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors - the Regulation Law, should not be limited to the basic design of the nuclear reactor but should cover all aspects of the operation of the nuclear power plant. They also submitted that the safety examination standards were not in conformity with the relevant legislation, that the discretionary powers of the administrative agency were questionable, and that the examination itself was insufficient.

The Court ruled that the scope of the safety examination was limited to the basic design of the nuclear reactor because the Regulation Law regulated nuclear activities stage by stage, and the issuing of permits for the installation of nuclear reactors fell within the Government's special technical discretion. The court confirmed that the safety examination met the requirements of the ordinances and guidelines, and that the basic design of the Fukushima II-1 nuclear reactor facilities complied fully with the safety assurance measures.

In relation to the Chernobyl accident, which had been a focus in the court arguments, the judgment stated that the Chernobyl accident was a reactivity initiated accident, caused by problems in the design and the operators' several violations of the rules, and that the occurrence of the Chernobyl accident did not raise a doubt as to the rationality of the safety examination for the basic design of the Fukushima II-1 nuclear reactor facilities.

## ● *United States*

### UNCONSTITUTIONALITY OF PRICE-ANDERSON PROVISIONS FOR REMOVAL OF PUBLIC LIABILITY ACTIONS TO FEDERAL COURTS (1990)

On 16th March 1990, in proceedings forming part of those initiated following the Three Mile Island-2 accident, Lewinter, et al v General Public Utilities Corp., et al, the United States District Court for the Middle District of Pennsylvania held that Congress had exceeded the scope of Article III, Section 2 of the United States Constitution by granting federal courts subject matter jurisdiction over third party liability (public liability) actions under the 1988 Price-Anderson Amendments Act.

The Price-Anderson Act, as amended by the 1988 Amendment Act, provides for federal courts to have jurisdiction with respect to any public liability action arising out of a nuclear incident and for removal of such actions pending in any State court to the appropriate federal court [Section 170n(2)]. The term "public liability" as used in the Price-Anderson Act refers to third party liability. The Act states that "a public liability action shall be deemed to be an action arising under Section 170 [of the Price-Anderson Act], and the substantive rules for decision in such action shall be derived from the law of the State in which the nuclear incident involved occurs, unless such law is inconsistent with the provisions of such Section" [Section 11hh].

Pursuant to these provisions a number of claims stemming from the 1979 accident at Three Mile Island were removed to the District Court for the Middle District of Pennsylvania on the motion of the defendants. The claims

were predominantly personal injury claims but included two cases alleging loss in tourist business as a result of the accident (see Nuclear Law Bulletin No 43).

The plaintiffs in the present proceeding objected to this removal on a number of grounds, including that the provisions of the Price-Anderson Act granting jurisdiction to federal courts were unconstitutional as exceeding the scope of Article III, Section 2 of the Constitution. Article III provides in part "The judicial power shall extend to all cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their authority"

Referring to the cases of Osborn v. Bank of United States 9 Wheat 738 (1824) and Verlinden B.V. v. Central Bank of Nigeria 461 US 480 (1983), the court held that the provisions of the Price-Anderson Act did exceed the scope of Article III of the Constitution. The Court noted that, in contrast to these earlier cases, the Price-Anderson Act did not codify the standards governing the matter made subject to the court's jurisdiction as an aspect of substantive federal law. Rather, the Price-Anderson Act provides for State law to be the governing substantive law. The right to bring an action for recovery of damages for alleged tortious injuries is created by State law and exists regardless of the provisions of the Price-Anderson Act

Recognising the importance of the issue of the constitutional validity of an Act of Congress, the District Court sent the matter for immediate appeal before the Circuit Court of Appeals for the Third Circuit

# NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

## ● *Australia*

### RADIATION PROTECTION

#### 1988 Code of Practice for the design and safe operation of non-medical irradiation facilities

This Code establishes requirements for the design and operation of irradiation facilities which use X-rays, electrons or gamma radiation for non-medical purposes such as the sterilisation of therapeutic goods. It applies only to irradiators incorporating the radioactive substances cobalt-60 or caesium-137 as sealed sources and irradiators such as linear accelerators. It specifies that if, in the future, it should be proposed that an existing or planned facility be used for the purpose of irradiating food for human consumption, this Code of Practice will need to be assessed to ensure it provides adequate guidance for that purpose.

The requirements set down by the Code aim to ensure that

- a) exposure of workers and members of the public to ionizing and non-ionizing radiation as well as to noxious gases is controlled through the design of engineering safety features (barriers, interlocks, shields, ventilation etc.), approved administrative controls and appropriate radiation monitoring,
- b) radioactive contamination of the environment and facilities is controlled through the design of engineering safety features (transport containers etc ), approved administrative controls and appropriate radiation monitoring.

#### 1988 Code of Practice for the control and safe handling of radioactive sources used for therapeutic purposes

This Code is intended as a guide to safe practices in the use of sealed and unsealed radioactive sources and in the management of patients being treated with them. It supplements the radiation safety legislation which is administered in each State or Territory by its health department or

commission That legislation covers matters such as permissible levels of exposure, working conditions, personal monitoring and use and transport of radioactive materials The Code, on the other hand, covers the procedures for the handling, preparation and use of radioactive sources, precautions to be taken for patients undergoing treatment, storage and transport of radioactive sources within a hospital or clinic, and routine testing of sealed sources

The Code recommends that hospitals and medical practitioners draw up their own detailed working procedures based on the appropriate legislation and the Code and that they issue such procedures to their staff

## ● *Belgium*

### REGULATIONS ON NUCLEAR TRADE

#### 1989 Order providing for licences for the export of certain goods (so-called strategic products)

This Ministerial Order of 29th November 1989 (published in the Official Gazette - *Moniteur belge* - of 20th December 1989) provides that the export of so-called strategic products mentioned in the Annex thereto is subject to a licence.

The Annex contains an Industrial List, followed by an International Atomic Energy List which includes and itemizes nuclear materials, nuclear installations and other nuclear-related equipment.

Nuclear materials cover, inter alia, special fissionable products, natural and depleted uranium and plutonium, while nuclear installations include facilities for the separation of isotopes of natural uranium, reprocessing plants, nuclear reactors, etc Other nuclear-related equipment is specified for example as neutron-generating systems, especially designed equipment for separating lithium isotopes or for producing or recovering tritium

By derogation, the export to Luxembourg and the Netherlands of those same products listed in the Annex is not subject to licensing

#### 1989 Order subjecting the transit of certain goods to a licence

This Ministerial Order of 29th November 1989 (published in the Official Gazette of 20th December 1989) provides that a licence is also required for the transit of goods specified in the Annex to the above-mentioned Ministerial Order of 1989 on licences for the export of so-called strategic products

No licence is required for goods in transit which are not transshipped or whose means of transport remains unchanged.

The provisions of this Order do not apply to goods in transit to or from Luxembourg or the Netherlands or which are on the free market in the latter country

This Order repeals the Order of 19th January 1987 on the same subject, amended by the Orders of 7th April 1988 and 29th May 1989

## ● *Brazil*

### RADIOACTIVE WASTE MANAGEMENT

#### 1989 Resolution on selection of sites for radioactive waste repositories

Resolution No. 13 was issued by the National Nuclear Energy Commission (CNEN) on 28th December 1989 on an experimental basis and published as CNEN Regulation NE-6.06 in the Official Gazette (Diario Oficial) of 24th January 1990.

The Resolution fixes the criteria and studies for determining the selection of sites which are suitable as radioactive waste repositories. Its purpose is to ensure the safe confinement of such wastes for the protection of man and the environment.

The Resolution applies to site selection for the interim and the final storage of radioactive wastes

## ● *Côte d'Ivoire*

### ORGANISATION AND STRUCTURE

#### Order establishing an Interministerial Committee for regulations on radioactivity and radiation protection (1988)

Order No 98 of 25th May 1988, made by the Minister for Public Health and the Population, establishes an ad hoc Interministerial Committee to assist

the Minister on all questions related to the safe manufacture and consumption of irradiated foodstuffs as well as the safe use of radioactive sources in industry and medicine. The Order was published in the Official Gazette of the Republic of Côte d'Ivoire of 30th June 1988.

The Order provides for the composition of the Committee, which is multidisciplinary and is chaired by the Director of the National Public Health Laboratory. The tasks of the Committee include proposals for regulations taking into account the international resolutions and standards connected with the work of the special committees of the FAO-WHO Codex Alimentarius and the International Atomic Energy Agency.

The ad hoc Committee will be dissolved when regulations on radioactivity and radiation protection in industry and medicine are adopted.

## ● *Czechoslovakia*

### GENERAL LEGISLATION

#### Review of nuclear legislation (1990)\*

In Czechoslovakia, nuclear activities are governed by a series of legislative and regulatory texts, briefly analysed below.

#### Act No 194/1988 on the Competence of Federal Central Bodies of the State Administration

The above Act (Sections 119 and 120) defines the competence of the Czechoslovak Atomic Energy Commission (CAEC) which is the national authority in the field of nuclear energy. The Commission, whose members are appointed by the Government is responsible for establishing the national scientific and technical policy in the field of the peaceful uses of nuclear energy and formulates proposals for its application. It participates in the establishment of projects for the nuclear programme and their application, in particular the Commission ensures that national requirements in the area of isotope production are met. Also, the Commission is responsible for the inspection of nuclear installations and for the accounting of nuclear materials. Finally, the Commission ensures the implementation of Czechoslovakia's international obligations relating to the safety of nuclear installations.

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\* This note has been prepared on the basis of information kindly supplied by Dr. Robert Bezdek from the Institute of Law, Czechoslovak Academy of Sciences.



Act No 28/1984 on State inspections for the safety of nuclear facilities

The purpose of the above Act is to ensure the safe operation of nuclear facilities, to prevent any hazard to the public and the environment

In accordance with the Act, the Commission is the competent authority for the licensing and inspection of nuclear facilities. Applications for licences to construct, operate or decommission such facilities must be submitted to the Commission. The Act defines a "nuclear facility" as a unit a part of which is a nuclear reactor undergoing a nuclear chain reaction for producing energy or as a source of ionizing radiation, as well as facilities for the storage and processing of nuclear materials. Transport of such materials also requires a licence from the Commission. After perusal of the application for a licence, as the case may be, for the siting, construction, operation or decommissioning of the facility concerned, the Commission establishes the conditions to be complied with, in particular, it lays down the safety parameters to be applied.

The Commission inspects such facilities during their operation, controls that the provisions on nuclear safety are complied with and provides its assistance in the setting up of devices to improve operational safety.

Nuclear safety inspectors from the Commission undertake the inspections and, in the discharge of their duties, may have access to all parts of the facility and pertinent documents. They may also perform technical controls of the equipment and check the qualifications of the facility's personnel. If the safety conditions are not complied with, they give the operator a time-limit within which to do so. They may also withdraw the permits of personnel who do not meet the required qualifications.

Those responsible for facilities or organisations conducting nuclear activities must inform the Commission of any occurrence likely to affect the safety of the facility or premises. Also, they must comply with the measures prescribed by the inspectors, in particular, regarding the safe operation of the equipment.

In the event of a nuclear accident, emergency plans are established to protect workers in the facility and the general public. The Commission is responsible for drawing up such plans in collaboration with the other authorities concerned.

Non-observance of the safety provisions, laid down by the Commission or its inspectors, by those in charge of facilities or organisations or by workers is subject to a fine, the amount of which is fixed by the Commission according to the nature of the breach and, in the case of workers, the degree of fault.

In addition to the two main Acts, a series of Regulations govern nuclear activities. Commission Regulation No 28/1977 determines the legal structure for the accounting of nuclear materials, in accordance with the Safeguards Agreement between Czechoslovakia and the IAEA in implementation of the Non-Proliferation Treaty.

Commission Regulation No. 67/1987 sets the administrative and technical requirements for environmental protection in the context of radioactive waste management.

Commission Regulation No. 100/1984 regulates the physical protection of nuclear materials and equipment.

Commission Regulation No. 191/1989 determines the criteria for controlling the qualifications of personnel in nuclear facilities and for granting their permits.

As regards provisions on health protection against ionizing radiation, those are contained in Regulation No. 59/1972 of the Ministry of Health of the Czech Socialist Republic and Regulation No. 65/1972 of the Ministry of Health of the Slovak Socialist Republic.

The technical aspects of nuclear safety, in particular, standards applicable to facilities, equipment and means of transport are contained in other Commission Regulations are also registered in the Collection of Laws but have not been published.

There is no specific legislation governing nuclear third party liability. This question is regulated by provisions in the Civil Code (Article 432 of Act No. 40/1964 as amended), Government Decree No. 40/1963 and Government Ordinance No. 46/1967. These provisions deal with particularly dangerous operations and establish the absolute liability of the operator if the damage is due to the dangerous nature of the operation. In transport cases, liability lies with the person responsible for the means of transport. As for accidents with transborder effects, Section 15 of Act No. 97/1963 on private international law is applicable.

## ● *Denmark*

### RADIATION PROTECTION

#### Order of 20th May 1988 amending the Order on X-ray diagnostic equipment for medical use\*

Order No. 286, made by the National Board of Health, was published in the Danish Official Gazette (Lovtidende) of 27th May 1988

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\* Note based on a summary of the Order published in the WHO Digest of Health Legislation, Volume 40(3), 1989.

This Order amends the provisions on occupational radiation protection of Order No. 217 of 29th April 1977 on X-ray diagnostic equipment for medical use (see Nuclear Law Bulletin No 22) The amendments concern X-ray examinations of women of childbearing age In particular, it is provided that in case of pregnancy, alternate methods to X-ray examinations must be applied

#### Order of 23rd March 1990 concerning medical surveillance of work with ionizing radiation

The Ministry of Labour Order No 206 of 23rd March 1990 concerning medical surveillance of work with ionizing radiation, was adopted in implementation of Council Directive 80/836 Euratom as amended by Directive 84/467/Euratom (see Nuclear Law Bulletin Nos. 26 and 34) It entered into force on 4th April 1990, replacing the Decree of 29th February 1972 (see Nuclear Law Bulletin No 11)

The Order prescribes that persons required to perform work in conditions that normally may expose them to ionizing radiation in doses exceeding 15 millisievert (mSv) a year must undergo a medical examination before starting work, to determine their fitness for this work They must also be subject to routine surveillance at least once a year as long as they continue performing this work, and must undergo an examination if they are likely to have been exposed to radiation as a result of irregularities, accidents, improper handling, etc

Employers must provide the medical practitioner with all the information required for the surveillance and facilitate medical examinations Reports concerning the medical control performed must be forwarded to the Labour Inspectorate and kept for at least 30 years after the persons concerned have ceased work of this type. The Order provides for sanctions for the persons contravening its prescriptions.

#### TRANSPORT OF RADIOACTIVE MATERIALS

##### 1989 Order on the transport of radioactive materials

This Order (No 731) of 27th November 1989 applies to the transport of radioactive materials and was made in implementation of Act No 94 of 31st March 1953 on nuclear substances, as provided by Order No 574 of 20th November 1975 on the safe use of such substances (see Nuclear Law Bulletin No 17) Its main purpose is to implement Euratom Directive 80/836 of 15th July 1980, amended by Euratom Directive 84/467 of 3rd September 1984 on the basic standards for the health protection of the general public and workers against the dangers of ionizing radiation

The provisions of the Order are based on the IAEA Regulations for the Safe Transport of Radioactive Materials, 1985 Edition National Regulations on transport of radioactive materials by road, rail, air or sea, made by the competent Ministers are also applicable

The Order repeals the Circulars of 16th June 1976 and 1st April 1976 on the transport and packaging of radioactive substances respectively (see Nuclear Law Bulletin No. 25).

The consignor of radioactive materials must be the holder of a licence on the use of such materials in accordance with the above-mentioned Act of 1953. He is responsible for the safety of the transport operation and must ensure that the provisions of the Order applicable to licences, packaging etc are complied with. Also, he must designate a person, approved as competent in radiation protection, to be in charge of such controls

The carrier must, in particular, ensure that personnel undertaking the transport is informed of the regulations in force regarding transport (concerning loading, storage, etc.), that all safety devices are functioning properly and that the materials carried are protected against theft and damage

In accordance with the Order, the Board of Health is the competent authority for the transport of radioactive materials, the State Institute of Radiation Hygiene which forms part of the Board carries out its radiation protection tasks. The carrier of radioactive materials must be approved by the Board which should also be informed by the carrier of the transport of such materials and, where applicable, of their interim storage. The Board may then fix conditions regarding, inter alia, the person in charge, the arrangements and safety devices for the storage facility as well as special instructions for personnel

Where provisions specify that an approval certificate is required for a model package or special form radioactive material within the meaning of the Order, this certificate is delivered by the Board of Health. Where necessary, the Board also delivers such a certificate for land transport of radioactive materials, the National Aviation Department and the Maritime Navigation Department deliver such certificates for air and maritime transport respectively. The applications, which must all be sent to the Board of Health must be submitted together with information and documents, as specified in the Order

For purposes of control, the Board must have access to the consignments, documents and means of transport at all times. Any decisions of the Board in implementation of the Order may be appealed before the Ministry of the Interior

As regards the procedures to be followed in case of an accident, it is provided that personnel in charge of transport must prohibit access to the affected area, keep it under surveillance, monitor the radioactivity and accordingly inform the Board of Health and the other competent authorities immediately. The authorities must also be informed immediately of any loss or theft of radioactive materials.

The Order has two Annexes. The first refers to the provisions of the IAEA Regulations on the Safe Transport of Radioactive Materials while the second deals with the applicable Danish provisions.

## ● Finland

### REGIME OF RADIOACTIVE MATERIALS

#### Ordinance on the authority to issue licences (1988)

Ordinance No 410/88 of 6th May 1988 provides for the competence of the Finnish Centre for Radiation and Nuclear Safety regarding licensing. It is henceforth the sole competent authority for the licensing of the transport, fabrication, use, import/export of and trade in radioactive substances and radiation-emitting equipment.

The Ordinance repeals two earlier Ordinances (Nos. 47/59 and 104/75) which provided for the competence of the previous Institute for Radiation Protection in such matters (see Nuclear Law Bulletin No 35)

### THIRD PARTY LIABILITY

#### Ordinance bringing into force certain provisions of the Act to amend the Nuclear Liability Act (1989)

Ordinance No 1245 of 22nd December 1989 brings into force certain provisions of the above-mentioned Act of 15th September 1989 dealing, among other issues, with the institution of the Special Drawing Right (SDR) as the unit of account for the purpose of this Act, and with the possibility of considering two or more installations operated by the same operator on the same site as a single nuclear installation (the text of the 1972 Nuclear Liability Act, as amended by that Act is reproduced in the Supplement to Nuclear Law Bulletin No 44)

It is recalled that the amendments essentially bring into line the 1972 Act with the Paris and Brussels Conventions, as modified by the 1982 Protocols respectively, and also raise the nuclear operator's liability to 100 million SDRs. The provisions contingent on the entry into force of the Protocol to amend the Brussels Supplementary Convention have not yet been implemented

## ● France

### RADIATION PROTECTION

#### Rules for preparing and forwarding radiation exposure statistical data on personnel mining radioactive substances (1990)

These rules were fixed by an Order of 15th January 1990 which was published in the Official Gazette of 18th February 1990.

The Order provides that operators mining radioactive substances must establish each year statistical data on exposure of personnel to ionizing radiation in work and installations.

The two tables annexed to the Order specify the statistical data to be supplied. The tables must be completed and sent, before 1st April of the following year, to the Regional Director for Industry and Research as well as to the Central Service for Protection against Ionizing Radiation (SCPRI)

The transmission of this data to the SCPRI is unconnected with the communication of data which that Service centralises, uses and maintains, in implementation of Decree No. 66-450 of 20th June 1966 on general principles for protection against ionizing radiation, as amended in 1988 (for further details, see analysis of the amendments in Nuclear Law Bulletin No 42)

#### CORRIGENDUM TO NUCLEAR LAW BULLETIN No 44, p 35

The date of the Order exempting certain products from the licensing regime for artificial radioelements should read: "28th April 1989"

### REGIME OF NUCLEAR INSTALLATIONS

#### 1990 Decree to amend the Decree of 1963 on large nuclear installations

Decree No. 90-78 of 19th January 1990, amending Decree No 63-1228 of 11th December 1963, already amended and supplemented by Decree No 73-405 of 27th March 1973 (see Supplement to Nuclear Law Bulletin No 12), was published in the Official Gazette (Journal officiel de la République française) of 21st January 1990.

It is recalled that the 1963 Decree lays down a prior licensing procedure for large nuclear installations, that is, those where the activity thresholds of the nuclear substances used exceed the levels laid down by Orders of 1966 and 1967, according to the type of installation. The setting

up of such installations is subject to a decree, they are categorised as follows

- nuclear reactors,
- certain particle accelerators;
- plants for preparing, fabricating or converting radioactive substances,
- facilities for storing, depositing or using radioactive substances, including radioactive waste.

The amendments by the 1990 Decree provide for a more detailed licensing procedure, in particular to harmonize the 1963 Decree with the Act of 1987 on the prevention of major risks (see Nuclear Law Bulletin No. 40). It is specified that henceforth, the application for a licence must also be forwarded to the Minister responsible for the prevention of major technological risks and must also be accompanied by a document describing, on the basis of the preliminary safety report, the measures to counteract the hazards caused by the installation and limit the consequences of a possible accident. As far as large nuclear installations are concerned, this document constitutes a risk analysis within the meaning of the Act of 1987.

Also, the 1963 Decree contained provisions relating mainly to the setting up and operation of large nuclear installations. Now, the decommissioning period is taken into account, both in the application and in the licence itself, which provides that the operator must justify the reasons for plant decommissioning in a report to the Head of the Central Service for the Safety of Nuclear Installations. The application for a licence must specify the measures to be applied for dismantling the installation.

## ENVIRONMENTAL PROTECTION

### 1990 Decree completing the 1980 general regulations on extractive industries

Decree No. 90-222 of 9th March 1990 was published in the Official Gazette of 13th March 1990 and will enter into force six months after publication

It completes the transfer into national legislation of Euratom Directive No. 80-836 of 15th July 1980 on basic standards for the health protection of the general public and workers against the dangers of ionizing radiation, as amended by Directive No. 84-467 (see Nuclear Law Bulletin Nos. 26 and 34)

It is recalled that French legislation on radiation protection has been amended to take into account the above-mentioned Directives and that this revision was analysed in Nuclear Law Bulletin No. 42.

This Decree inserts in the General Regulations on extractive industries (ionizing radiation) laid down by Decree No. 80-331 of 7th May 1980 a Part 2 relating to environmental protection Part 1 concerning the protection of workers was inserted by Decree No. 89-502 of 13th July 1989

The provisions of the 1990 Decree apply to surface facilities and workings of radioactive substances. They determine the annual permissible exposure limits to ionizing radiation during management of radioactive products, the monitoring of releases and the environment and the controls set up by the authorities

Finally, the Decree specifies that work must be conducted in such a way as to ensure that its radiological impact on the environment should be as low as reasonably achievable

## ● *Federal Republic of Germany*

### ENVIRONMENTAL PROTECTION

#### Implementation of the European Community Directive on the assessment of the effects of certain projects on the environment (1990)

An Act of 12th February 1990 to implement the Directive of the Council of the European Communities No. 85/337/EEC of 27th June 1985 on the assessment of the effects of certain public and private projects on the environment (Official Journal of the EC No. L 175 of 5th July 1985) was adopted by Parliament and published in Bundesgesetzblatt 1990, I, p. 205

The Act applies to nuclear installations within the meaning of Sections 7 and 9b of the Atomic Energy Act (licensing and planning procedures), also covering the cooling towers of nuclear installations (the text of the Atomic Energy Act is reproduced in the Supplement to Nuclear Law Bulletin No 36). The inclusion of such installations within the scope of the new Act means that the applicant for a licence for a nuclear installation must carry out an additional administrative procedure. This procedure aims at securing that the effects of the project concerned on the environment are recognised, described and assessed at an early stage and that the results of the assessment are taken into account in all administrative decisions concerning the project.

This entails an amendment to Sections 7, 9b and 21 of the Atomic Energy Act so as to take into account the new Environment Assessment Act



## THIRD PARTY LIABILITY

### 1990 Act to amend the Civil Code and other Acts (Atomic Energy Act)

An Act of 14th March 1990 to amend the Civil Code (Bürgerliches Gesetzbuch) and other Acts, including the Atomic Energy Act, was published in Bundesgesetzblatt 1990, I, p. 478

The Atomic Energy Act (Section 29, paragraph 2) originally provided that claims for compensation for moral damage, namely for pain and suffering, were not transferable or inheritable. The 1990 Act deletes that sentence from the Atomic Energy Act, thus doing away with that provision.

## ● *German Democratic Republic*

### GENERAL LEGISLATION

#### Review of nuclear legislation

The current process of German unification is leading to fundamental changes in the legal system of the German Democratic Republic. In particular, the German Democratic Republic plans to replace its own nuclear legislation by the Atomic Energy Act and implementing Ordinances of the Federal Republic of Germany. The following review\* should accordingly be seen in this perspective.

#### 1. Competent Authorities

State control of the use of atomic energy is presently exercised in the German Democratic Republic through licensing and surveillance of nuclear activities. Overall responsibility for the peaceful uses of nuclear energy is vested in the Council of Ministers which provides the central direction and planning for all measures concerning the use of nuclear energy and protection against its dangers, taking all the fundamental decisions

The Board of Nuclear Safety and Radiation Protection (SAAS) is the controlling organ of the Council of Ministers. The President of the Board is appointed and recalled by the Council of Ministers and is accountable to the Council for the activities in his area of competence. His responsibilities

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\* This note is largely based on an article by Dr. Nobbe, Legal Adviser, Kernforschungszentrum, Karlsruhe, entitled "Rechtsgrundlagen für die friedliche Nutzung der Kernenergie in der DDR" (Legal basis for the peaceful use of atomic energy in the GDR) in Atomwirtschaft, March 1990.

are laid down in the Statute of the Board of Nuclear Safety and Radiation Protection by Resolution of the Council of Ministers of 30th August 1973, as amended on 14th January 1975

These responsibilities include, inter alia, issuing regulations, guidelines and standards on nuclear safety and radiation protection, taking into consideration the level of scientific and technical developments and the requirements of the economy.

The Board is also responsible for granting licences for the handling of radioactive materials, the operation of nuclear installations and the transportation of radioactive materials and nuclear fuel. In addition, the Board deals with matters relating to the membership of the GDR in the International Atomic Energy Agency (IAEA).

## 2 Structure of Legislation

The basic nuclear legislation currently includes:

- the Act on the Use of Atomic Energy and Protection against its Dangers - Atomic Energy Act (AEG) of 8th December 1983,
- the Ordinance on Nuclear Safety and Radiation Protection (VOAS) of 11th October 1984, made in implementation of the Atomic Energy Act,
- the Regulations of 11th October 1984 executing the above Ordinance,
- the Order on the issuing of Radiation Protection Licences for Nuclear Installations of 21st June 1979.

In addition, further orders and enabling provisions have been issued by the President of the Board of Atomic Safety and Radiation Protection in relation to his area of competence.

## 3. Radiation Protection

The Atomic Energy Act lays down the fundamental principles for the peaceful uses of nuclear energy and protection against its hazards. Thus it is provided that nuclear energy must be used and promoted in ways which will be "to the benefit and well-being of socialist society". Furthermore, the protection of human life and health and that of the environment are given priority over economic and other aims; this principle also holds true for the storage of radioactive waste.

These principles are implemented in the Ordinance of 11th October 1984 (VOAS) which specifies that nuclear safety and radiation protection must achieve the following aims:

- protection of human life and health, including that of generations to come against the harmful effects of ionizing radiation,

- protection of the environment against radioactive contamination,
- strict observance of measures to foster nuclear safety and radiation protection in order to protect radiation workers and the population,
- physical protection of nuclear fuel and power plants against criminal attacks,
- compliance with the Agreement on Safeguards concluded with the IAEA

It should be noted, furthermore, that licences for nuclear activities are named "radiation protection licences" (see below)

The provisions on radiation protection are based on international regulations and guidelines, and in particular, on the recommendations of the International Commission on Radiological Protection (ICRP)

Therefore, according to the 1984 Ordinance on Nuclear Safety and Radiation Protection (VOAS), dose levels for exposure to radiation are laid down according to the principles of justification and optimisation. The aim is to avoid the unjustifiable use of nuclear energy, and to keep exposure to radiation as low as is reasonably achievable.

The primary protection dose limits for radiation exposure of workers and the general public have been laid down by the President of the Board of Nuclear Safety and Radiation Protection, and may not be exceeded.

The following levels are valid for radiation workers in twelve consecutive months:

- 50 mSv as the effective dose equivalent;
- 500 mSv as the equivalent dose for organs and tissues, and
- 150 mSv as the equivalent dose for the lens of the eye.

The following dose limits apply to the general public in one year

- 5 mSv as the effective dose equivalent,
- 50 mSv for organs and tissues

It must also be ensured that the average annual effective equivalent dose for a member of the public over a period of fifty years is limited to 1 mSv

The VOAS has defined categories for monitoring radiation workers according to working conditions, so as to adjust the monitoring measures to the corresponding hazards. For category A radiation workers, radiation exposure may exceed 3/10ths of the values laid down. For category B radiation workers, radiation exposure may not exceed 3/10ths of those values.

According to the Atomic Energy Act (AEG), the operator of a nuclear power plant is responsible for ensuring compliance with the dose limits and the conditions for the safe operation of the plant. He must appoint a member of staff responsible for radiation protection (Radiation Protection Officer).

The Radiation Protection Officer must ensure compliance with the radiation protection regulations in his area of responsibility. He advises the plant operator on questions of radiation protection, and must ensure that the foreman and workers carry out their duties in that respect. When asked to do so by the Board of Nuclear Safety and Radiation Protection, the Radiation Protection Officer must report on his monitoring activities, and make assessments and evaluations on problems within his area of responsibility.

#### 4 Licensing of Nuclear Activities

Licence to undertake nuclear activities is granted according to the type of activity concerned. Handling of sealed radiation sources, operation of tried and tested devices, and R&D on nuclear energy only require straightforward registration. Nuclear installations on the other hand must be licensed according to a set procedure defined in the above-mentioned Order of 21st June 1979 on radiation protection licences.

##### a) Radiation Protection Licences

The following are defined as nuclear installations and require a radiation protection licence: nuclear power plants; nuclear heating facilities, research reactors and other reactor installations, sub-critical assemblies, facilities for treatment, processing and storage of nuclear material; reprocessing plants; and repositories for the final storage of radioactive waste.

Applications for a licence for a nuclear installation must be made to the Board of Nuclear Safety and Radiation Protection according to the procedure defined in the 1979 Order and in compliance with the VOAS

A radiation protection licence is issued in five stages

- agreement to siting,
- agreement to construction;
- agreement to start-up;
- agreement to full operation; and
- agreement to shutdown

The type and contents of the documents to be provided by the applicant for a licence are laid down in the Appendix to the Order

##### b) State Monitoring and Inspection

State monitoring of nuclear safety is conducted by the Board of Nuclear Safety and Radiation Protection by means of inspections, checks and measurements, as well through the evaluation of reports submitted by the operator. Inspectors appointed by the Board perform the monitoring activities which chiefly cover radiation protection of the employees, protection of the environment; safety of nuclear installations and prevention of the misuse of nuclear energy

### c) Radioactive Waste Management

The provisions relating to radioactive waste are contained in the Atomic Energy Act and the 1984 Decree (VOAS). It should be noted that the "Polluter Pays Principle" is applied to the handling and storage of radioactive waste. The VOAS provides that

- radioactive materials which are no longer needed for their original purpose, should only be treated as radioactive waste if no further use can be found for them and when they can no longer be used as secondary raw materials,
- radioactive emissions into the atmosphere as well as the final storage of radioactive waste are only permitted within the applicable regulatory framework;
- radioactive waste must be collected, processed and stored separately from other forms of waste. The waste must be collected and stored in central repositories and no other type of disposal is permitted

In compliance with the above requirements, an Order on the central collection and final storage of radioactive waste was adopted on 25th February 1986. It provides that, during the planning stages of a nuclear installation, the necessary measures for radioactive waste disposal must be taken into account.

The Order confirms the validity of the exemption limits laid down by the VOAS and provides that radioactive waste below the limits may be disposed of on a weekly basis without a licence. It also specifies that operators of plants producing radioactive waste must send it to the plant dealing with central collection and final storage. Such storage means that the waste must be transported to a final repository where the conditions are suitable for isolating the radionuclides from the environment until the exemption limits are reached.

A licence was granted for the operation of a final radioactive waste repository located at Morsleben. The conditions under which the repository will accept waste from the waste producers are laid down in the Regulations on the general conditions for central collection and final storage of radioactive materials of 4th September 1981 and the Regulations on the general conditions for radioactive materials of 15th December 1987.

## 5 Transport Regulations

Regulations on the transport of radioactive materials by land, air and waterways were made outside the 1984 Decree (VOAS). Such provisions are contained in the Regulations on the transport of radioactive materials (ATRS of 27th November 1989) and in the above-mentioned Regulations of 1987 on the general conditions for radioactive materials.

## 6 Third Party Liability

The German Democratic Republic is not a Party to international Conventions on civil liability for nuclear damage.

The Atomic Energy Act does not contain detailed provisions on nuclear third party liability. Section 10 of the Act establishes some general rules and provides that liability for damage resulting from the use of nuclear energy is determined according to the provisions of the Civil Code on "extended responsibility of damage", i.e. those dealing with strict liability (Section 343 to 347 of the Civil Code). This absolute liability lies with firms, not with individuals, and is unlimited.

## ● Hungary

### RADIATION PROTECTION

#### Ordinance on radiation protection (1988)\*

Ordinance No 7 of 20th July 1988 was made by the Minister of Social Affairs and Health in implementation of Ordinance No. 12 of 5th April 1980 by the Council of Ministers and deals with radiation protection. The Ordinance was published in the Hungarian Official Gazette (Magyar Közlöny) No 33 of 20th July 1988.

The Ordinance lays down the radiation protection standards applicable to all activities involving the use of atomic energy, to protect workers and the general public against the harmful effects of ionizing radiation.

It is provided, in particular, that radiation protection services must be accessible to establishments using atomic energy and that those responsible for such establishments must draw up internal radiation protection rules. The Ordinance also contains provisions on licensing, safety measures and accident situations as well as on transport, supply and disposal of radioactive substances.

The Ordinance is supplemented by a series of Annexes relating, inter alia, to maximum permissible doses to workers and certain members of the public; health requirements applicable to the setting up and operation of

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\* Note based on a summary of the Ordinance published in the WHO Digest of Health Legislation, Vol. 40(3), 1989

nuclear installations, training in radiation protection; standards for the final disposal of radioactive waste, accident prevention

The Ordinance repeals various texts in the radiation protection field.

#### TRANSPORT OF RADIOACTIVE MATERIALS

##### Ordinance on the despatch and transport of radioactive substances (1988)\*

Ordinance No 8 of 31st October 1988 on the despatch and transport of radioactive substances, by the Minister of Transport, was published in the Hungarian Official Gazette No. 51 on the same date.

It lays down the conditions for the transport by road, rail, waterway and air of the radioactive substances referred to in the above-mentioned Ordinance No. 7 of 20th July 1988 dealing with radiation protection.

## ● *Ireland*

#### GENERAL LEGISLATION

##### Radiological Protection Bill, 1990

The Minister for Energy presented the above Bill to Parliament (Dáil Éireann) on 28th March 1990.

The purposes of this Bill are:

- to set up a Radiological Protection Institute of Ireland and to dissolve the Nuclear Energy Board, transferring its functions to the Institute (see Nuclear Law Bulletin Nos 8 and 13),
- to enable a range of radiation protection measures to be taken by various Ministers in the event of a radiological emergency,

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\* Note based on a summary of the Ordinance published in the WHO Digest of Health Legislation, Vol 40(3), 1989

- to give effect to the provisions of the Conventions on the Physical Protection of Nuclear Material (1980), on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) and on Early Notification of a Nuclear Accident (1986).

The Bill provides that the Institute will be the Irish competent authority for the purposes of the above-mentioned Conventions and vests it with the necessary powers to discharge the related duties

The Bill specifies the functions of the Radiological Protection Institute. It will be responsible for monitoring radioactivity and for advising the Government on radiation safety matters. It will also provide its assistance in radiological emergency planning and responses and will control the use of radioactive substances and carry out or co-ordinate related research. More particularly, the tasks of the Institute will include preparing and issuing codes of practice and safety guidelines on the use of radioactive substances and irradiating apparatus; licensing of such substances and apparatus, making recommendations on proposals for legislation on radiation protection; and certification of radiation levels

Inspectors may be appointed by the Institute and by various Ministers in relation to their duties, who will be empowered to inspect and examine radioactive substances and devices, to take samples of food, etc. In case of danger to persons or property, the inspectors will be authorised to seize or dispose of such substances or devices and also to order evacuations if necessary

As regards radiation protection measures, the Minister for Energy will be enabled to lay down by regulations maximum levels of radioactive contamination in food, water, etc. When such regulations have been made under this legislation or by the European Communities and, due to a radiological emergency, may be exceeded, the Ministers for Agriculture and Food, the Marine, Finance and Health will be authorised to make regulations to protect the public from contaminated food or products and to destroy animals or poultry.

Finally, the Bill makes provision for the repeal of the Nuclear Energy Act, 1971 and for the amendment of the Safety, Health and Welfare at Work Act, 1989 (see Nuclear Law Bulletin No. 43), the Health Act, 1953, and the Factories Act, 1955. The amendment to the 1989 Act will result from adoption of the 1990 Bill, while the two latter Acts are to be amended to provide that the Ministers of Health and of Labour must consult with the Institute before making regulations relating to radioactive substances



## ● Japan

### GENERAL LEGISLATION

#### Review of nuclear legislation (1990)

##### 1 Structure of Legislation

The Japanese nuclear power development programme began in 1966 with the start-up of a gas-cooled reactor (166 MWe) and at that time, all the national nuclear laws had already been published. Following the Diet approval of a State budget for promoting nuclear power development in 1954, the Science Council of Japan, also in 1954, issued a statement which required the Government to apply principles for the peaceful uses of nuclear power. This paved the way for the Atomic Energy Basic Law (Law No 186, 19th December 1955) and the Law for the Establishment of the Atomic Energy Commission (Law No 188, 19th December 1955). The former laid down the foundations for organisation, regulation, compensation, etc of research, development and utilization of nuclear energy. The latter provided for the functions, authority, members, etc of the Atomic Energy Commission.

One year later, two Laws were established to conduct research on and development of nuclear power under Government supervision - the Japan Atomic Energy Research Institute Law (Law No 92, 4th May 1956) and the Atomic Fuel Corporation Law (Law No 94, 4th May 1956, later repealed when the Power Reactor and Nuclear Fuel Development Corporation Law - Law No 73, 20th July 1967 - was established).

Subsequently, the following Laws covering nuclear activities were enacted:

- the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactor (Law No 166, 10th June 1957),
- the Law on Compensation for Nuclear Damage (Law No. 147, 17th June 1961),
- the Law on Indemnity Agreements for Compensation of Nuclear Damage (Law No. 148, 17th June 1961),
- the Law concerning Prevention from Radiation Hazards due to Radioisotopes, etc (Law No 167, 10th June 1957),
- the Electric Utility Industry Law (Law No 170, 11th July 1964),
- the Shipping Safety Law (Law No 11, 15th March 1933), and finally
- the Basic Law for Countermeasures against Disasters (Law No 223, 15th November 1961).

Most of these Laws were revised on several occasions since their adoption.

The texts of the Compensation Law, its implementing Ordinance and the Indemnity Agreement as last amended, are reproduced in the Supplement to this issue of the Bulletin.

## 2. Basic Policy

The purpose of the Atomic Energy Basic Law is to secure energy resources for the future as well as to encourage the research, development and utilization of nuclear energy. Nuclear activities are solely limited to peaceful purposes and are undertaken according to the three above-mentioned principles issued by the Science Council of Japan: (i) democratic management, (ii) independent development of national technologies, and (iii) public access to information

## 3. Organisation

The Atomic Energy Commission and the Nuclear Safety Commission are attached to the Prime Minister's Office and act as advisory bodies. The Atomic Energy Commission's responsibilities cover matters related to promoting nuclear activities, while the Nuclear Safety Commission's responsibilities cover matters related to regulating nuclear activities (see Analytical Study on the Regulatory and Institutional Framework for Nuclear Activities, Vol I, OECD/NEA, Paris, 1983).

Originally the former Atomic Energy Commission played both the Commissions' roles. In 1978 a division of responsibilities was decided to make a distinction between the "promotion" and the "regulation" of nuclear activities to ensure independent control of their safety, and thus, the Nuclear Safety Commission was set up to this effect (see Nuclear Law Bulletin No. 22).

Although both Commissions are advisory in nature, their roles are significant. The reports of the Atomic Energy Commission have a direct bearing on Government decisions on nuclear development while the Nuclear Safety Commission's investigations for licensing nuclear reactor installations, etc. are an independent check (so-called "double check") against the administrative agencies' examinations (STA, MITI and MOT, see below).

## 4. Regulation

### 1) Licensing and inspection procedures

The Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (hereinafter referred to as "the Regulation Law") governs nuclear activities which are divided into six sectors: installation and operation of reactors, refining, fabrication, reprocessing, use of nuclear

fuel material, and waste disposal (see Licensing Systems and Inspection of Nuclear Installations, OECD/NEA, Paris, 1986)

The following is an outline of licensing and inspection procedures for nuclear power plants. As a first step, an electric power enterprise selects and determines a site for a nuclear power plant. This requires the consent of the local government, including the residents in the area. The enterprise then submits a construction plan to the Electric Power Development Co-ordination Council through the Ministry of International Trade and Industry (MITI), in accordance with the Electric Power Development Promotion Law (Law No. 283, 31st July 1952). At the same time, the enterprise presents a report stating the results of a general environment assessment such as thermal pollution, and environmental effects other than radiation effects. The Council discusses and approves the construction plan as a part of the national fundamental plan for electric power development (including not only nuclear power but also fossil and hydro power, etc.) Before discussion in the Council, the Ministry of International Trade and Industry - MITI holds a first public hearing, in which the residents in the site area state their opinions and put questions about the plan.

After the construction plan has been approved, the electric power enterprise applies for an installation permit to the Ministry of International Trade and Industry, in accordance with the Regulation Law. The Ministry examines the design concepts of the nuclear power plant, the safety analyses, and the environmental and social conditions of the site area and prepares a report. The Atomic Energy Commission and the Nuclear Safety Commission make a thorough review of the report independently. During this review, the Nuclear Safety Commission holds a second public hearing to ask the residents in the site area for their views on the safety problems, particularly site conditions related to safety, to take account of their opinions in its safety review. The Commissions draw up their reports and submit them to the Ministry which, based on the findings of the report, then grants a construction licence to the applying electric power enterprise.

The electric power enterprise draws up detailed designs and plans according to the approved principal design concept. This work is undertaken in various stages, each of which requires approval by the Ministry of International Trade and Industry. The Ministry conducts various tests and inspections during the construction stage, following which it grants an operating licence to the enterprise concerned. It generally takes approximately 50-70 months from the beginning of construction to the start of operation.

Once plant operation starts, the equipment relevant to safety is inspected by the Ministry of International Trade and Industry approximately once a year.

#### 11) Major amendments

The Regulation Law was amended several times to take nuclear developments into account. The major amendments are briefly described below.

STA, MITI and MOT are designated as the competent licensing authorities (1978)

For greater efficiency, the licensing provisions of the Regulation Law were amended to provide for a division of responsibilities. The Ministry of International Trade and Industry (MITI) became the competent authority for the licensing of nuclear power plants, while the Ministry of Transport (MOT) and the Science and Technology Agency (STA) became the competent authorities for nuclear ships and for other nuclear activities, (e.g. reprocessing, respectively (see Nuclear Law Bulletin No. 22).

Private companies are authorised to undertake reprocessing activities (1979)

In order to establish a system for promoting more actively reprocessing of spent nuclear fuel and utilization of plutonium, the Law also authorised private companies to carry out reprocessing activities (see Nuclear Law Bulletin No. 24). The Japan Nuclear Fuel Service Company, Ltd. was set up and financed by several electric power companies in March 1980. The completion of a commercial reprocessing facility, with a reprocessing capacity of 800 ton-uranium per year, is scheduled for 1997.

Waste disposal (1986)

The Regulation Law was amended to include radioactive waste disposal operations in its scope (see Nuclear Law Bulletin No. 38). The Japan Nuclear Fuel Industries Company, Ltd. was set up in March 1985 to undertake underground disposal of low-level radioactive waste while the Japan Nuclear Fuel Service Company, Ltd. is responsible for the storage of high-level radioactive waste arising from overseas fuel reprocessing.

Physical protection (1988)

To enable Japan to ratify the Convention on the Physical Protection of Nuclear Material, the Regulation Law was amended to include provisions in this respect. The necessary measures had been taken nationally in the meantime in accordance with administrative guidelines (see Nuclear Law Bulletin No. 43).

5. Compensation

As already mentioned, the Law on Compensation for Nuclear Damage and the Law on Indemnity Agreements regulate this question in Japan.

i) Third party liability regime

Where nuclear damage is caused as a result of reactor operation, etc., the operator responsible for the reactor is exclusively liable therefor, irrespective of fault. The amount of liability of the nuclear operator is not limited in Japan. While it is implicitly acknowledged that unlimited liability is in effect limited financially by the operator's assets, a limited liability for nuclear activities is difficult to accept politically in Japan.

Also, practical questions such as estimates of nuclear damage, priorities of distribution etc are not taken into account in the legislation.

A nuclear operator must cover his liability for nuclear damage by financial security amounting to 30 billion yen (approximately \$209 million) for each single site, but a lower amount has been fixed for certain categories of nuclear installations which present a lesser risk. The Japan Atomic Energy Insurance Pool was organised in 1959 to provide an insurance for liability for nuclear damage. The insurance capacity of this pool is a major factor in deciding the amount of financial security

The State provides for two measures for compensation of nuclear damage a government indemnity agreement to complement insurance for liability, and State aid for compensation of possible nuclear damage exceeding the amount of financial security (see Analytical Study on Nuclear Third Party Liability, OECD/NEA, Paris, revision in preparation)

#### ii) Major amendments

The Compensation Law and the Law on Indemnity Agreements were revised several times. The major amendments are briefly described below.

##### Increases in financial security (1971, 1979, 1989)

The amount of financial security was raised three times with due consideration to the insurance capacity (see Nuclear Law Bulletin Nos. 9, 23 and 43).

- 1961 originally. 5 billion yen,
- 1971 revision 6 billion yen,
- 1979 revision: 10 billion yen,
- 1989 revision: 30 billion yen.

##### Transfer of liability for transport of nuclear fuel from consignee to consignor (1971)

Before this revision, the consignee was liable for nuclear damage in the case of transport of nuclear fuel, because transport was considered as a service supplied to the nuclear operator receiving the materials. The amendment, transfers liability to the consignor of the materials in view of his duty to safely package the materials for the transport operation (see Nuclear Law Bulletin No. 9).

##### Damage caused by the fault of a third party is omitted from the cases where a nuclear operator retains a right of recourse (1971)

Originally, the nuclear operator who had paid compensation for nuclear damage had a right of recourse when the damage was caused not only by the wilful act of a third party but also by the fault of a third party. However, the provisions giving the operator a right of recourse in this latter case were deleted, in particular, due to the frequency of transports of nuclear fuel (see Nuclear Law Bulletin No. 9)

Damage suffered by a nuclear operator's employees is included in the scope of the Compensation Law (1979)

Damage suffered by a nuclear operator's employees in the course of performing their duties was at first excluded from the scope of the Compensation Law. The reasons for this exclusion were that such employees were recruited in accordance with a labour agreement and it had been decided that priority should be given to the protection of third parties in general, not covered by such an agreement. Also, any damage suffered by employees was covered primarily by the workmen's compensation system as an industrial accident or occupational disease.

A controversy over this issue arose when the original Law was enacted and studies on the question were carried out mainly by the Atomic Energy Commission. As a result of the Commission's findings, the Law's provisions were revised to cover damage suffered by employees (see Nuclear Law Bulletin No. 23).

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As seen from the above, nuclear legislation has been amended regularly in Japan to keep in step with nuclear developments. However, given that this legislation dates back to the 1950s, studies are presently being conducted to examine whether it should be completely reorganised.

## ● *Netherlands*

### RADIATION PROTECTION

#### 1988 Order to amend the Radiation Protection Decree of 1986

It is recalled that the Radiation Protection Decree (Stb. 1986, No. 465) replaced the Radioactive Materials Decree (Stb. 1969, No. 404) (see Nuclear Law Bulletin No. 41). Both the latter Decree and the Ionizing Apparatus Decree expired on 1st April 1987.

The Order of 20th December 1988 (Stb. 1988, No. 607) amends the Radiation Protection Decree by inserting a provision to the effect that all licences issued before 1st April 1987 under either Decree remained valid under the Radiation Protection Decree.

The 1988 Order also makes some consequential amendments to the Contributions Decree (Stb 1981, No 455) and the Transport Decree (Stb. 1969, No 405), in particular, to replace the references to the obsolete Decrees with references to the Radiation Protection Decree

## ● *Norway*

### TRANSPORT OF RADIOACTIVE MATERIALS

#### Royal Decree of 1989 laying down Regulations on the land transport of dangerous goods

By Royal Decree of 12th February 1976, Norway implemented the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Its provisions govern both international and domestic transport by road of radioactive materials under Regulations of 20th December 1979 (see Nuclear Law Bulletin No 25).

A Royal Decree of 8th December 1989 lays down Regulations on the land transport of dangerous goods which replace the 1976 Decree and the 1979 Regulations.

### REGULATIONS ON NUCLEAR TRADE

#### Royal Decree of 1989 extending the authority of the Institute for Energy Technology regarding imports of nuclear material

By Royal Decree of 6th November 1969, the Institute for Energy Technology (Institutt for Energiteknikk - IFE) is the national body responsible for implementing international safeguards in Norway and is licensed to possess nuclear materials. Any imports of such material and equipment must be notified to IFE whose approval is required for any national transfers in their respect

A Royal Decree of 2nd June 1989 amends the 1969 Decree to extend the IFE's authority in this field until 30th June 1992

## ● *Poland*

### RADIATION PROTECTION

#### Order on dose limits for ionizing radiation and derived limits defining their hazards (1988)

The above Order of the President of the National Atomic Agency of 31st March 1988 lays down the dose limits for ionizing radiation, as well as derived limits defining a hazard from ionizing radiation. The Order prescribes dose limits for persons:

- occupationally exposed to ionizing radiation,
- in the vicinity of sources of ionizing radiation, including nuclear power plants who are exposed to its effects due to radioactive contamination of the environment;
- exposed to such radiation through use of everyday products which emit it

Special dose limits are laid down for women of childbearing age, pregnant women and persons aged between 16 and 18.

Annex 1 contains the formulas for defining the doses while Annex 2 sets out the values of derived limits resulting from the annual dose limits of occupationally exposed persons.

## ● *Spain*

### ORGANISATION AND STRUCTURE

#### 1989 Order authorising ENRESA to assign funds in relation to spent fuel storage facilities

An Order of 30th December 1988 had already authorised the National Radioactive Waste Company (*Empresa nacional de Residuos Radiactivos - ENRESA*) to assign funds to local councils on whose municipal territories radioactive waste storage facilities are located (see Nuclear Law Bulletin No 44)

This Order, dated 1st December 1989, made in furtherance of the above-mentioned Order, authorises ENRESA to assign funds to local councils



under the same conditions for spent fuel storage facilities. It was published in Official Gazette No. 295 (Boletín Oficial del Estado) of 9th December 1989

## ● *Sweden*

### RADIATION PROTECTION

#### Ordinance on maximum limits for exposure to radiation (1989)

This Ordinance (SSI FS 1989 1) was adopted on 17th March 1989 and entered into force on 1st January 1990.

The Ordinance is based on the provisions of the 1988 Radiation Protection Act and complies with the recommendations of the International Commission on Radiological Protection - ICRP (the text of the 1988 Act is reproduced in the Supplement to Nuclear Law Bulletin No 42)

The Ordinance lays down dose limits for radiation workers and the general public. These limits are 50 and 1 millisieverts (mSv) per year respectively. Special limits have also been introduced for accumulated doses during radiation work: these must be less than 180 mSv at 30 years of age and less than 700 mSv over a lifetime. In effect, this stipulation limits the average yearly dose to less than 15 mSv per year.

The Ordinance provides furthermore that, henceforth, pregnant women are entitled to be transferred to posts not involving radiation work during their pregnancy.

## ● *Switzerland*

### RADIOACTIVE WASTE MANAGEMENT

#### 1989 Ordinance on preparatory measures for a radioactive waste repository

On 27th November 1989, the Federal Council (the Government) adopted this new Ordinance on preparatory measures for the construction of a radioactive waste repository (Ordinance on Preparatory Measures). It repealed

a similar previous Ordinance of 1979 (see Nuclear Law Bulletin No 28) and entered into force on 1st January 1990.

The 1978 Federal Order concerning the Atomic Energy Act (see Nuclear Law Bulletin Nos. 20 and 31) provides that the Federal Council must grant a licence before preparatory measures can be undertaken for constructing a radioactive waste repository (in practice, the research carried out by the National Corporation for Radioactive Waste Disposal - CEDRA) The licensing procedure is determined by ordinance

Under this new Ordinance, the federal licensing procedure is restricted mainly to nuclear safety This avoids dealing with aspects which will, in any event, be taken into account in cantonal procedures and simplifies the procedure at federal level. The list of measures requiring a licence is limited to work which might subsequently affect the nuclear safety of any final repository such as galleries, shafts, underground caverns and deep boring holes Other work, for example, seismic research and surface drilling, do not require a licence from the Federal Council but must be notified to the supervisory authorities This new Ordinance should enable CEDRA to accelerate its work

## ● *United States*

### RADIATION PROTECTION

#### Amendment to Regulations on Safety Requirements for Industrial Radiographic Equipment (1990)

On 10th January 1990, the Nuclear Regulatory Commission (NRC) published in the Federal Register (55 FR 843) an amendment to its Regulations in 10 CFR 34 which provides that persons licensed to perform radiography must use only radiographic exposure devices and associated equipment with new safety features Also, radiographers are required to wear alarm ratemeters The new requirements are intended to reduce radiation exposures to both radiography personnel and the general public from the use of radiographic equipment The amendments affect persons licensed to perform industrial radiography and manufacturers of radiographic equipment

## THIRD PARTY LIABILITY

### Regime applicable to large power reactors (1990)

Large power reactors are not defined as such in the Price-Anderson Act or in related federal regulations (10 CFR Part 140). However, the Act, as amended in 1988, in requiring financial protection for licensees, imposes a specific amount of financial protection for "facilities designed for producing substantial amounts of electricity and having a rated capacity of 100 000 electrical kilowatts or more" (the text of the Act, as amended, is reproduced in the Supplement to Nuclear Law Bulletin No. 42).

#### Financial Protection Required

The amount of financial protection required for large power reactors is the maximum amount available at reasonable cost and on reasonable terms on the insurance market, now \$200 million. In addition, there is private cover available under an industry retrospective rating plan. This provides for premiums deferred in whole or in part until the public liability from a nuclear incident exceeds or is likely to exceed \$200 million. The standard deferred premium per reactor licensee is limited to \$63 million per nuclear incident, but cannot exceed \$10 million in any one year, for each large facility owned or leased by the licensee. Also, licensee may not be charged more than its pro rata share of the aggregate public liability claims and costs arising out of the incident.

The Nuclear Regulatory Commission (NRC) may assess annual deferred premium amounts less than the standard annual deferred premium amount (a) for any facility, if more than one nuclear incident occurs in any one calendar year, or (b) for any licensee licensed to operate more than one facility, if the NRC determines that the financial impact of assessing the standard annual deferred premium amount would result in undue financial hardship to the licensee or ratepayers of the licensee.

If the NRC assesses a lesser annual deferred premium, it must require payment of the difference between the standard annual deferred premium assessment and any lesser annual deferred premium assessment within a reasonable period of time, including interest determined by the Secretary of the Treasury.

The NRC must establish requirements necessary to ensure availability of funds to meet any assessment of deferred premiums, and may provide reinsurance or otherwise guarantee the payment of the premiums if it appears that the funds required may not be obtained in good time. An agreement by the NRC with a licensee or indemnitor to guarantee the payment of deferred premiums may contain appropriate terms including terms, to assure reimbursement for payments made by the NRC, terms creating liens upon the facility and the revenues derived from the facility or any other property or revenues of the licensee, and consent to automatic revocation of the licence.

If funds available to pay valid claims in any year are insufficient as a result of the limitation on the amount of deferred premiums that may be required in any year, or the NRC is required to provide reinsurance or guarantee payments of premiums, the NRC must, in order to advance the necessary funds, request the Congress to appropriate sufficient funds to enable it to make such payments, or to the extent approved in appropriation Acts, issue to the Secretary of the Treasury obligations as may be agreed by the NRC and the Secretary.

Funds other than those appropriated for purposes of providing reinsurance or guaranteed payments must be repaid to the general fund of the US Treasury from amounts made available by standard deferred premium assessments, with interest as specified by the Secretary.

### Liability

The Price-Anderson Act, as amended, does not establish a legal basis for liability in the event of a nuclear incident, this matter is left to the laws of the individual states. Under these laws, not only the operator of a nuclear installation may be held liable, but also other persons, such as the carrier of nuclear materials or the supplier of a reactor component. As defined in the Price-Anderson Act, "public liability" includes any legal liability arising out of or resulting from a nuclear incident. The insurance system required by that Act protects not only the licensee but also other persons who could conceivably be held liable for a nuclear incident under state law. There is, accordingly, no channelling of liability to the operator of a nuclear installation as under the Paris and Vienna Conventions, but the practical effect is very much the same because regardless of who actually caused the nuclear damage, the action is likely to be brought against the operator (de facto or economic channelling). Whether the operator has a right of recourse against persons who have caused the damage intentionally or under the express terms of a contract also depends upon state law.

The Price-Anderson Act imposes a limitation of liability for a nuclear incident to approximately \$7 billion made up of the financial protection required for operating NRC-licensed large nuclear power plants.

Where a nuclear incident occurs which involves damage likely to exceed that amount (excluding interest and costs), the NRC is directed to make a survey of the causes and extent of the damage and report the results to the Congress, the parties involved, and to the competent courts. This report is published.

If the US District Court having jurisdiction determines that the public liability will exceed the applicable limit of liability, total payments cannot exceed 15 per cent of the limit of liability without prior approval of the Court, the latter cannot authorize payments in excess of that amount unless it determines that the payments will be made in accordance with conditions it has approved. The payments must not prejudice the adoption and implementation of a plan of distribution developed by the President of the United States. That plan, which the President must submit to the Congress, should include (1) an estimate of the aggregate dollar value of personal injuries and property damage arising from the nuclear incident that exceeds the amount of aggregate

public liability, (2) recommendations for additional sources of funds to pay such claims including possible revenue measures (taxes); (3) one or more schemes to provide for full and prompt compensation for all valid claims, including provisions for payment of claims for latent injuries discovered at a later date, and (4) any additional legislation necessary to implement the compensation plans

The NRC must, and any other interested person may, then submit proposals to the Court for disposition of pending claims and for the distribution of remaining funds available. The proposals must include an allocation of appropriate amounts for personal injury claims, property damage claims, and possible latent injury claims and establishment of priorities between claimants and classes of claims, as necessary to ensure the most equitable allocation of available funds. The Court has all power necessary to approve, disapprove, or modify plans proposed, or to adopt another plan, and to determine the proportionate share of funds available for each claimant.

Nuclear damage covered by the Price-Anderson Act includes bodily injury, sickness, disease, death, loss of or damage to property, or loss of use of property arising out of or resulting from the radioactive, toxic, explosive or other hazardous properties of source, special nuclear or byproduct material. Nuclear damage also includes legal liability arising out of or resulting from a precautionary evacuation.

The Price-Anderson Act excludes from coverage, by reason of the definition of "public liability" claims under state or federal workmen's compensation laws of employees of persons indemnified who are employed at the site of and in connection with the activity where the nuclear incident occurs; claims arising out of an act of war, and claims for damage to, or loss of use of property located at the site of and in connection with the licensed activity where the nuclear incident occurs. Also excepted is damage to property of licensees if such property is located at the site of and used in connection with that activity. It is recalled, however, that the nature, form and extent of compensation for nuclear damage, within the maximum limits of liability, depend on the applicable state law.

Although the Price-Anderson Act does not itself establish a legal basis for liability in the event of a nuclear incident at a licensed facility, the NRC is authorized, with respect to extraordinary nuclear occurrences, to incorporate provisions in indemnity agreements with licensees, or require their incorporation in insurance policies, which waive certain defences which may be available to the defendant in a tort action under state law. These are, for example: any issue or defence as to conduct of the claimant or fault of persons indemnified, any issue or defence as to charitable or governmental immunity, and any issue or defence based on any statute of limitations.

If a nuclear incident constitutes an extraordinary nuclear occurrence as defined in Section 11 of the Atomic Energy Act, which occurs in the course of the construction, or operation of a large power reactor, or in the course of transportation of licensed material to or from a facility, the NRC may incorporate provisions in insurance policies or contracts furnished as proof of financial protection which waive any issue or defence as described above.

Such waivers are judicially enforceable by the claimant against the person indemnified. They do not preclude a defence based upon a victim's failure to take reasonable steps to mitigate damages, nor do they apply to injury or damage to a claimant or to his property which is intentionally sustained or which results from a nuclear incident intentionally and wrongfully caused by the claimant. The waivers do not apply to any claim which is not within the protection afforded under the terms of insurance policies or contracts furnished as proof of financial protection or indemnity agreements, and the limit of liability provisions of the Price-Anderson Act.

The NRC's regulations concerning an extraordinary nuclear occurrence (10 CFR Part 140, Subpart E) presently define the latter by reference to two criteria as follows:

#### Criterion I

There has been a substantial discharge of radioactive material off-site, or there have been substantial levels of radiation off-site when radioactive material is released from its intended place of confinement and

- a) persons off-site were or, could have been, exposed to radiation resulting in a dose in excess of a specified level, or
- b) surface contamination of off-site property has occurred in excess of specified values, or
- c) surface contamination of any off-site property has occurred as the result of a release of radioactive material in the course of transportation at levels in excess of specified values

#### Criterion II

If an event satisfies Criterion I, it is determined that the event has resulted or will probably result in substantial damages to persons or property off-site if

- a) the event has caused the deaths or physical injury, within thirty days of the event, of five or more people located off-site, or
- b) damage off-site amounting to \$2.5 million or more has been or will probably be sustained by any one person, or of more than \$5 million in the aggregate has been or will probably be sustained, or
- c) damage off-site amounting to \$5,000 or more has been or will probably be sustained by each of fifty or more persons, provided that damage of \$1 million or more has been sustained

A Presidential Commission on Catastrophic Nuclear Accidents set up by the 1988 amendments to the Price-Anderson Act is charged with conducting a comprehensive study of appropriate means of fully compensating victims of a catastrophic nuclear accident that exceeds the amount of aggregate public

liability It must submit a report to the Congress setting forth recommendations for (a) any changes in the laws and rules governing the liability and civil procedures necessary for the equitable and prompt resolution and payment of valid damage claims, (b) any standards or procedures to establish priorities for the hearing, and payment of claims when the awards are likely to exceed the amount of funds available within a specified time period, and (c) special standards or procedures necessary to decide and pay claims for latent injuries caused by the accident

The President has established a Study Commission of ten members which set up three committees to study and make recommendations on the above Those committees are focussing on latent injuries, appropriate forums and procedures, as well as methods of giving priorities to claims and establishing the amount of compensation for various types of personal injury and property damage resulting from a catastrophic nuclear accident

The Price-Anderson Act does not impose time limits for bringing claims; this is a matter left to the applicable state law. However, as regards extraordinary nuclear occurrences, indemnity agreements may provide for the waiver of any defence based on any statute of limitations if action is brought within three years from the date on which the claimant first knew, or reasonably should have known, of his injury or damage and the cause thereof

In a suit for damages resulting from a nuclear incident, the US District Court in the district where the nuclear incident takes place, or if a nuclear incident takes place outside the United States, the US District Court for the District of Columbia, has original jurisdiction without regard to the citizenship of any party or the amount in controversy. On motion of the defendant or of the NRC, an action pending in any state court shall be removed or transferred to the US District Court having venue under the Act. It should be noted that this removal provision was held by the US District Court for the Middle District of Pennsylvania to be beyond the scope accorded Congress in Article III of the Constitution in Lewinter, et al. v General Public Utilities Corp , et al. on 16th March 1990 (see the Chapter on "Case Law" in this issue of the Bulletin)

Following any nuclear incident, the chief judge of the US District Court having jurisdiction (or the judicial council of the judicial circuit in which the nuclear incident occurs) may appoint a special management panel to co-ordinate and assign cases arising out of the incident, if

- 1) a US District Court determines that the aggregate amount of public liability is likely to exceed the amount of primary financial protection available (the insurance); or
- ii) the chief judge of the US District Court determines that cases arising out of the incident will have an unusual impact on the work of that court

Each management panel, composed of United States district judges or circuit judges, is directed to

- 1) consolidate claims for hearing or trial,

- ii) establish priorities for the handling of difference classes of cases,
- iii) assign cases to a particular judge or special master (officer of court),
- iv) appoint masters to hear particular types of cases, or particular elements or procedural steps of cases,
- v) promulgate special rules of court, to expedite cases or allow equitable consideration of claims;
- vi) implement other measures to encourage the equitable, prompt, and efficient resolution of cases arising out of the nuclear incident, and
- vii) assemble and submit to the President of the United States data that may be useful in estimating the aggregate damages from the nuclear incident.

#### REGULATIONS ON NUCLEAR TRADE

##### Nuclear Co-operation with the People's Republic of China (1990)

On 16th February 1990, the President signed into law the Foreign Relations Authorisation Act, FY 1990-1991 (Public Law 1201-246) Title IX, Section 902 of that Act "suspends" any application for a licence under the Export Administration Act of 1979 for the export to the People's Republic of China (PRC) any goods or technology determined under Section 309(c) of the Nuclear Non-Proliferation Act of 1978, to be of significance for nuclear explosive purposes, or which, in the judgment of the President, is likely to be diverted for use in such a facility, for any nuclear explosive device, or for research on or development of any nuclear explosive device. Also suspended are any applications for a licence for the export to the PRC of any nuclear material, facilities, or components subject to the US-PRC Agreement for Co-operation (see Nuclear Law Bulletin No. 36 for text of the Agreement)

It also provides that no approval shall be given for the transfer or retransfer to the PRC of any nuclear material, facilities, or components subject to the Agreement for Co-operation; also, no specific authorisation shall be given for assistance in any activities with respect to the PRC relating to the use of nuclear energy.

The suspensions and prohibitions of approval or authorisation described above apply until the President certifies to the Congress that the PRC has provided clear and unequivocal assurances to the United States that it is not assisting and will not assist any non nuclear-weapon State in acquiring nuclear explosive devices or the materials and components for such devices

The Act also provides that the President shall negotiate with the governments participating in the Co-ordinating Committee on Export Controls (COCOM) to suspend, on a multilateral basis, any liberalisation by the COCOM



of controls on exports of goods and technology to the PRC (for further details on COCOM see Volume I of the Study on the "Regulation of Nuclear Trade" published by OECD/NEA in 1988)

Sixty days after enactment of the Authorisation Act (17th April 1990) it is provided that the President must submit to the Congress a report, inter alia, on any steps taken by the Government of the PRC to achieve the objectives described above, and the effect of multilateral sanctions on political and economic developments in the PRC on its international economic relations.

## ● *Zimbabwe*

### REGIME OF RADIOACTIVE MATERIALS

#### The Hazardous Substances and Articles (Supply, Registration, Disposal and Operation of Ionizing Radiation Apparatus) Regulations, 1987

The above Regulations (Statutory Instrument No. 81 of 1987) apply to all apparatus emitting ionizing radiation for medical, dental, veterinary or chiropractic use

They lay down a system of registration and licensing for such apparatus and the Hazardous Substances and Articles Board is the competent authority in this respect. No ionizing radiation apparatus may be operated without a licence issued by the Board. Applications for registering the apparatus and subsequently for a licence must be made to the Board on special forms as set out in the Schedules to the Regulations

When considering an application for a licence, the Board takes into account whether the applicant has the qualifications related to the operations proposed to be carried out with the apparatus concerned, and whether he has appropriate knowledge of the principles and practices of radiation protection. The Board may make additional inquiries and inspect the apparatus and its premises. Licences are granted for a period determined by the Board

The Regulations do not apply, inter alia, to television sets, visual display units, video monitors or cathode ray oscilloscopes.

# INTERNATIONAL REGULATORY ACTIVITIES

## ● *OECD Nuclear Energy Agency*

### COUNTRIES TO HAVE OPTION OF REMOVING NUCLEAR INSTALLATIONS BEING DECOMMISSIONED FROM THE COVERAGE OF THE PARIS CONVENTION

At its meeting on 20th April 1990, the OECD Steering Committee for Nuclear Energy (NEA) decided to allow Contracting Parties to the Paris Convention the option of removing nuclear installations being decommissioned from the coverage of the Paris Convention if the installations satisfy certain technical criteria

This decision is part of the on-going work by the OECD Nuclear Energy Agency (NEA) on the third party liability regime applicable to the back-end of the fuel cycle and, in particular, the decommissioning of nuclear installations. The Paris Convention does not expressly state whether it continues to apply to a nuclear installation otherwise covered by its provisions, once that installation has ceased to operate and is being decommissioned. The work of the NEA on this topic had previously resulted, in 1987, in the Steering Committee endorsing an interpretation of the Paris Convention as covering such installations. At that time, however, it was recognised that a point would exist in the decommissioning process beyond which it would not be necessary to keep installations under the special regime of liability and insurance of the Paris Convention. Accordingly, further studies were undertaken to define this point

The decision of the Steering Committee sets minimum conditions for the removal of installations being decommissioned from the coverage of the Paris Convention. It does not, however, require Contracting Parties to remove installations satisfying these conditions. This is left to the discretion of the Contracting Party concerned. These conditions comprise both quantitative limits on the level of radioactivity in the installation and general requirements such as the permanent cessation of the operation of the installation, the removal of any nuclear fuels and fluids, as well as the waste produced during operation of the installation, and the maintenance of regulatory control and appropriate confinement.

The Steering Committee is empowered to make such a decision by Article 1(b) of the Paris Convention which authorises the Steering Committee if in its view the small extent of the risks involved so warrants, to exclude any nuclear installation, nuclear fuel or nuclear substances from the application of the Convention

#### RECOMMENDATION TO INCREASE THE AMOUNT OF LIABILITY OF NUCLEAR OPERATORS

At this same session, the OECD Steering Committee for Nuclear Energy recommended that Contracting Parties to the Paris Convention adopt as a joint objective the setting of the limit of the liability of nuclear operators at not less than 150 million Special Drawing Rights (SDRs).

Under Article 7(b) of the Paris Convention the limit of the operator's liability is set at 15 million SDRs, but Contracting Parties are authorised to establish a higher amount by national legislation, subject to insurance cover being available. Indeed, as the capacity of insurance markets has increased over the years since the adoption of the Paris Convention, most Contracting Parties have raised the level of the operator's liability. This was particularly the case following the 1982 revision of the Paris Convention even though that revision did not change the reference amount of liability under Article 7(b). Not all Contracting Parties have raised the level of the operator's liability, however, and amongst those which have there is a wide divergence as to the level chosen. The recommendation recognises that the capacity of the insurance markets in Member countries now permits a liability limit much greater than that originally envisaged by the Paris Convention and aims to harmonize the limits provided under the national legislation of Contracting Parties.

In addition, the Steering Committee recommended that Contracting Parties examine the possibility of providing simplified methods for adjusting the liability of the operator under their national legislation so that changes in the capacity of the insurance market can be taken into account without having to resort to inevitably complex and time-consuming procedures for amending this legislation

#### INTERNATIONAL SEVERITY SCALE FOR NUCLEAR ACCIDENTS AND INCIDENTS

Although nuclear operators around the world have generally achieved very high standards of safety, safety-related events do occur at nuclear installations. The vast majority of such events have no radiological consequences and their implications for continued safe operation are very slight. However, it is very difficult for the media and public to make judgments about the seriousness of such events and very small incidents have sometimes caused unnecessary concern

Because of the difficulties involved in explaining complex technical issues, the nuclear community has explored possible new mechanisms for

explaining to the media and public the significance of incidents and accidents at nuclear plants, in order to put them into better perspective. In this respect, it has been suggested that if a suitable severity scale could be developed to classify events according to their health and safety significance, this would be an important aid to better understanding

This is why at its April 1990 session, the Steering Committee agreed to the experimental application of an international severity scale for nuclear accidents and incidents for a trial period of one year.

Several countries have already been developing such scales on a national level and in particular France, which was the first country to put a severity scale in use, followed by Japan. It was widely appreciated, however, that the proliferation of different scales was to be avoided if at all possible, since this might lead to confusion, and the potential usefulness of an internationally agreed severity scale appeared evident. Consequently, the NEA, and successively the IAEA, developed a single severity scale, for use within countries and between countries, to describe the safety significance of incidents and accidents

Following a preliminary study carried out by the NEA Committee on Radiation Protection and Public Health, NEA and IAEA jointly organised a series of expert meetings, in Paris and in Vienna, to exchange experience on development and use of existing severity scales and to establish the framework for the introduction of a severity scale acceptable internationally

The international scale resulting from this work is designed for prompt assessment following an event likely to affect the safety of nuclear installations. It is a means for promptly communicating to the public in consistent terms the health and safety significance of events reported at nuclear power plants. By putting events into proper perspective, the scale could facilitate a common understanding between the nuclear community, the media and the public

The current plans of NEA and IAEA involve the application of the international scale for a trial period of one year in those Member countries which will wish to adopt it. At the end of this trial period to be monitored by both Agencies, the results of the experiment will be assessed, together with any changes needed, before this scale is applied on a permanent basis

## ● *International Atomic Energy Agency*

### STANDING COMMITTEE ON LIABILITY FOR NUCLEAR DAMAGE

In accordance with a recommendation from the Working Group on Liability for Nuclear Damage (see Nuclear Law Bulletin No 44), the IAEA Board of Governors on 21st February 1990 revised the mandate and name of the Standing Committee on Civil Liability for Nuclear Damage to charge it with considering, in addition to international civil liability, international State liability and the relationship between international civil and State liability.

The Standing Committee met on the basis of its revised mandate on 23rd-27th April 1990 to continue the work carried out by the Working Group on Liability for Nuclear Damage. The Committee addressed each of the issues which had been identified and studied by the Working Group and a number of concrete proposals for revision of the Vienna Convention on Civil Liability for Nuclear Damage were put forward. In many instances, agreement in principle was reached on amendments which should be made to the Vienna Convention.

In particular, there was general support for: extending the definition of the damage covered by the Vienna Convention; extending the existing ten-year time limit for submission of claims to thirty years in the case of loss of life and personal injury; and increasing the amount of compensation guaranteed to victims of a nuclear accident by the Convention.

With respect to the issue of the damage covered by the Vienna Convention, a proposal was made to expressly include the cost of measures to prevent or minimise damage, losses consequential upon such measures, damage to the environment and loss of profit, in addition to the current references to loss of life, personal injury and loss of or damage to property. This proposal received the support of a large majority of the delegations.

With respect to compensation, the Committee recognised that the security provided to victims rested not simply on the level of the operator's liability but on the operator being able to provide compensation funds up to that limit. This was guaranteed by the requirement under the Vienna Convention that the operator have insurance to cover his liability. The Committee noted that the capacity of the insurance market had greatly expanded since the adoption of the current limit specified in the Vienna Convention and that this would enable a significant increase in the level of the operator's liability. In addition, the Committee considered means other than private insurance by which further financial coverage for an even higher level of liability might be provided. Systems, either on the national or international level, of pooling of funds by operators and of State funding were discussed. The concept of additional State funding supplementing that of the operator in cases where the damage could exceed the operator's liability or financial resources in particular received broad support.

The discussion on this matter was directly related to that on international State liability for nuclear damage, as the amount of compensation which would be available under an international civil liability regime was one reason why such a regime was considered inadequate by some delegations. Other respects in which the existing civil liability regime might be considered unsatisfactory were identified as environmental damage and procedures for the settlement of claims. These matters were put forward by some delegations as calling for the establishment of a Convention on State liability for nuclear damage. The possibility was raised, on the other hand, that the Vienna Convention might be revised to accommodate these concerns. It was proposed to incorporate a requirement of State funding of compensation in addition to that funded by the operator, to expressly include environmental damage in the damage covered, and to enable States to bring claims not only on their own behalf but on behalf of individuals, in certain cases directly against the State of the operator liable. With respect to the latter issue, proposals were made that an international claims settlement tribunal or claims commission be established. No decision was taken at this stage as to which approach should be adopted.

The work of the Standing Committee will be continued in a second session to be held on 15th-19th October 1990.

#### UPDATE OF RECOMMENDATIONS ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL (1989)

The IAEA's Recommendations on the Physical Protection of Nuclear Material published in 1977 [INFCIRC/225/Rev 1] have been updated.

The Recommendations deal with measures for the physical protection of nuclear material in use, transport, transit and storage, as well as with that of nuclear facilities.

The Convention on the Physical Protection of Nuclear Material, which came into force on 8th February 1987, constitutes an important framework for international co-operation on such protection (see Nuclear Law Bulletin No 24 for text of Convention and Nuclear Law Bulletin No 43 for its status). This latest update of the Recommendations was issued in December 1989 [INFCIRC/225/Rev.2], and reflects mainly the international consensus established in respect of that Convention, the experience gained since 1977, and a wish to give equal treatment to protection against the theft of nuclear material and protection against the sabotage of nuclear facilities.

## ● *European Communities*

### REGULATIONS RELATING TO RADIOLOGICAL EMERGENCIES AND RADIOACTIVE CONTAMINATION

The Council and the Commission of the European Communities have continued their regulatory work on protection of the public in the context of radiological emergencies and radioactive contamination.

Since publication of the last Nuclear Law Bulletin in December 1989, the Council has adopted a Directive on informing the general public about health protection measures in case of a radiological emergency [89/618 Euratom] and a further Regulation on conditions governing imports of agricultural products [Regulation (EEC) No 737/90]. The Commission for its part has completed the table in Council Regulation (Euratom) No. 2218/89 with regard to maximum levels of contamination with respect to feedingstuffs [Regulation (Euratom) No 770/90] (see Nuclear Law Bulletin No. 44). The three texts are reproduced in the "Texts" Chapter of this issue of the Bulletin.

It should be noted that Community Regulations and Directives have been reproduced in previous issues of the Bulletin and are referred to and referenced in the Study on Intervention Levels in this issue.

## ● *Nuclear Suppliers Group*

### COMMUNICATIONS FROM CERTAIN IAEA MEMBER STATES REGARDING GUIDELINES FOR NUCLEAR TRANSFERS

The Nuclear Suppliers Group, more commonly known as the "London Club" (its members having originally met in that town) is made up of countries whose purpose is to harmonize export policies from the safeguards and control angle for transfers of "nuclear items" outside the framework of the IAEA and the Non-Proliferation Treaty. This applies in particular to technology transfers, control of retransfers and physical protection.

Not having concluded a formal agreement, the countries involved agreed on a series of parallel unilateral commitments. According to the agreed procedure, they each send the Director General of IAEA a communication to inform him of their decision to conform to a set of principles contained in attached Guidelines and requesting that their communication be circulated to IAEA Member States. These principles conform to the IAEA objectives with regard to safeguards and non-proliferation.

These "Guidelines for the Export of Nuclear Material, Equipment or Technology" are contained in INFCIRC/254, February 1978 (reproduced in Nuclear Law Bulletin No 21) The work of the London Club and other bodies on reinforcing controls over nuclear trade is analysed in the Study on "The Regulation of Nuclear Trade", Vol. I "International Aspects", OECD/NEA, 1988

Since publication of the above Study, which reproduces the Communications received by the IAEA and circulated under the INFCIRC reference, Spain, Norway, Belgium and Luxembourg have also sent communications regarding implementation of their commitment to apply the Guideline principles [INFCIRC/254/Add 11 to Add.14, October 1988 to December 1989]



# AGREEMENTS

## BILATERAL AGREEMENTS

### ● *Australia - Egypt*

#### AGREEMENT CONCERNING CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY AND THE TRANSFER OF NUCLEAR MATERIAL (1988)

This Agreement was concluded on 18th February 1988 and entered into force on 2nd June 1989. Both countries are non-nuclear weapon States which are Parties to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons and have concluded agreements with the International Atomic Energy Agency (IAEA) for the application of safeguards in their respective countries in connection with this Treaty. The Agreement aims to establish conditions consistent with the Treaty obligations of the two countries under which nuclear material can be transferred between them.

The Agreement specifies that nuclear material transferred between Australia and Egypt is not to be used for the manufacture of or research on nuclear weapons or other nuclear explosive devices or for any military purpose. Compliance with this requirement is to be ensured by the IAEA safeguards system in accordance with the Agreements between each country and the IAEA. Furthermore, nuclear material subject to the Agreement is not to be transferred beyond the territorial jurisdiction of the recipient Party, enriched to 20 per cent or greater in the isotope U-235 or reprocessed without the prior written consent of the supplier Party.

In addition, the Agreement requires each Party to take measures to ensure the physical protection of nuclear material within its jurisdiction and sets down minimum acceptable measures. These reflect those set down in the 1980 Convention on the Physical Protection of Nuclear Material to which Australia is a Party.

## ● *France-Switzerland*

### AGREEMENT ON EXCHANGE OF INFORMATION IN CASE OF AN INCIDENT OR AN ACCIDENT WHICH MAY HAVE RADIOLOGICAL CONSEQUENCES (1989)

The Government of the French Republic and the Swiss Federal Council concluded the above Agreement on 30th November 1989

This Agreement replaces the 1979 Agreement on exchange of information in case of a radiation emergency (see Nuclear Law Bulletin No 25) It refers to the Agreement concluded in Vienna on 26th September 1986 on Early Notification of a Nuclear Accident to which both countries are Parties and which provides for such bilateral arrangements (the text of the 1986 Agreement is reproduced in the Supplement to Nuclear Law Bulletin No 38) The channels of communication provided under the previous Agreement have been simplified The scope of the new Agreement is wider since it also includes exchanges of information on incidents without radiological consequences It applies to the Bugey, Fessenheim, Creys-Malville (France) and Mühlberg, Leibstadt, Gösgen, Beznau (Switzerland) nuclear power plants as well as to the transport of radioactive substances in border areas

The Agreement entered into force on 18th January 1990

## ● *F.R. of Germany-USSR*

### ADDITIONAL AGREEMENT TO THE 1988 AGREEMENT ON EARLY NOTIFICATION AND EXCHANGE OF INFORMATION (1989)

The Agreement of 25th October 1988 between the Federal Republic of Germany and the Union of Soviet Socialist Republics on Early Notification in the event of a Nuclear Accident and Exchange of Information on Nuclear Installations has already been reported in Nuclear Law Bulletin No 42 The Agreement, which entered into force on 16th February 1989 in accordance with its Article II, was published in Bundesgesetzblatt 1990, II, p 165

It is supplemented by the text of a note verbale of 13th June 1989 (published in the same BGBI) as an Additional Agreement to implement Article 5 of the 1988 Agreement fixing the extent of the information to be exchanged The nuclear power plants determined as reference installations are

Neckarwestheim-1, Philippsburg-2 (FRG) and WER-440 Rovno-2,  
WER-1000 Zaporoshje-3 (USSR)

The Additional Agreement entered into force on 8th January 1990

## ● *Italy-Switzerland*

### 1989 AGREEMENT ON THE EXCHANGE OF INFORMATION ON NUCLEAR INSTALLATIONS

The Agreement between Italy and Switzerland on the exchange of information on nuclear installations was concluded on the 15th December 1989 in furtherance of the IAEA 1986 Convention on early notification of nuclear incidents (the text of the Convention is reproduced in the Supplement to Nuclear Law Bulletin No. 38), and reflects its provisions to a large extent

In accordance with this Agreement, the Parties will notify each other immediately through predetermined "contact points" of all emergency situations which could have radiological consequences and will communicate the type of information required in order to allow the evaluation of associated risks

## ● *Italy-USSR*

### MEMORANDUM OF CO-OPERATION IN THE FIELD OF CONTROLLED THERMONUCLEAR FUSION (1989)

The above Agreement was concluded on 10th October 1989 between the Italian National Committee for Nuclear and Alternative Energy Sources (ENEA) and the USSR State Committee for the Utilisation of Atomic Energy (SCUAE)

Co-operation in the field of controlled thermonuclear fusion will be conducted in the framework of the Agreement between both countries on co-operation in the field of the peaceful uses of nuclear energy, concluded on 22nd October 1965. In particular, both Parties decided on a co-operative experimental programme in the field of magnetic confinement fusion in 1990-1991. Work will be carried out alternately in Italy and the USSR

As a general rule, the financial clauses defined in the 1965 Agreement will be applied.

A Note on the status of international co-operation on thermonuclear fusion research was published in Nuclear Law Bulletin No 44

## MULTILATERAL AGREEMENTS

### PARIS CONVENTION ON THIRD PARTY LIABILITY IN THE FIELD OF NUCLEAR ENERGY AND BRUSSELS SUPPLEMENTARY CONVENTION (1990)

The Paris Convention and the Brussels Supplementary Convention have both been amended by Protocols of 16th November 1982, the Protocol to the Paris Convention entered into force on 7th October 1988 (see Nuclear Law Bulletin Nos. 24 and 30 for detailed information on the amendments) Also, more recently, on 21st September 1988, a Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention was adopted, linking both Conventions. In this way, when it enters into force, the Parties to each Convention will benefit from the coverage provided by the other (see Nuclear Law Bulletin No. 42 for text of the Joint Protocol, see also Nuclear Law Bulletin No. 44 for status of the Vienna Convention and the Protocol)

The following tables give the status of ratifications of the Paris and Brussels Conventions and the amending Protocols as at 30th March 1990

**PARIS CONVENTION**

Signatories	Date of ratification		
	Convention	1964 Additional Protocol	1982 Protocol
Austria			
Belgium	3 8.1966	3.8.1966	19 9 1985
Denmark	4 9.1974	4.9 1974	16 5 1989
Finland (acc.)	16 6.1972	16.6 1972	22 12.1989
France	9.3 1966	9 3 1966	
Germany, F.R	30.9 1975	30.9 1975	25 9.1985
Greece	12.5 1970	12 5 1970	30.5.1988
Italy	17.9 1975	17 9.1975	28.6 1985
Luxembourg			
Norway	2 7.1973	2.7 1973	3 6 1986
Netherlands	28 12.1979	28.12 1979	
Portugal	29.9 1977	29 9 1977	28 5.1984
Spain	31 10 1961	30 4 1965	7 10.1988
Sweden	1.4 1968	1 4.1968	8 3.1983
Switzerland			
Turkey	10 10 1961	5 4.1968	21 1 1986
United Kingdom	23 2.1966	23.2 1966	19 8 1985

**BRUSSELS SUPPLEMENTARY CONVENTION**

Signatories	Date of ratification	
	Convention and 1964 Additional Protocol	1982 Protocol
Austria		
Belgium	20.8.1985	20 8.1985
Denmark	4.9.1974	10.5.1989
Finland (acc.)	14.1 1977	15.1 1990
France	30 3.1966	
Germany, F.R	1 10.1975	25.9 1985
Italy	3 2.1976	14 6 1985
Luxembourg		
Norway	7.7.1973	13 5.1986
Netherlands	28.9.1979	
Spain	27 7.1966	29.9 1988
Sweden	3 4.1968	22.3 1983
Switzerland		
United Kingdom	24.3.1966	8 8.1985

### VIENNA CONVENTION (1990)

Since publication of the status of signatures and ratifications of the Vienna Convention on Civil Liability for Nuclear Damage in Nuclear Law Bulletin No 44, further developments have been recorded

Chile ratified the Convention on 23rd November 1989 and Poland acceded to it on 23rd January 1990.

### JOINT PROTOCOL (1990)

Since publication of the status of signatures and ratifications of the Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention in Nuclear Law Bulletin No 44, further developments have been recorded

Chile ratified the Joint Protocol on 23rd November 1989, Poland acceded to the Protocol on 23rd January 1990 and Hungary approved it on 26th March 1990

### AFRICAN REGIONAL CO-OPERATIVE AGREEMENT FOR RESEARCH, DEVELOPMENT AND TRAINING RELATED TO NUCLEAR SCIENCE AND TECHNOLOGY (1990)

The above Agreement, sponsored by the IAEA, was endorsed by that Agency's Board of Governors on 21st February 1990. Article XIV thereof provides for entry into force of the Agreement upon receipt of notification of its acceptance by three Member States belonging to the African region. It entered into force upon notification of acceptance by Algeria on 4th April 1990. The two other States having notified their acceptance are Egypt and Tunisia.

The Agreement will remain in force for a period of five years and may be extended for further five-year periods.

The Agreement is similar in content to the 1987 Regional Co-operative Agreement covering Asia and the Pacific reproduced in Nuclear Law Bulletin No 41.

### CONVENTION ON CIVIL LIABILITY FOR DAMAGE CAUSED DURING CARRIAGE OF DANGEROUS GOODS BY ROAD, RAIL AND INLAND NAVIGATION VESSELS (1989)

The above Convention (CRTD) was adopted in Geneva by the Inland Transport Committee of the United Nations Economic Commission for Europe on 10th October 1989.

The purpose of the Convention, which applies to death, personal injury and environmental damage, is to provide adequate and swift compensation of damage suffered on the basis of well-defined legal procedures, through the carrier's mandatory insurance

The Convention specifically excludes nuclear damage from its scope under the following conditions

Article 4

"This Convention shall not apply

- b) to damage caused by a nuclear substance
- 1) if the operator of a nuclear installation is liable for such damage under either the Paris Convention of 29th July 1960 on Third Party Liability in the Field of Nuclear Energy and its Additional Protocol of 28th January 1964 or the Vienna Convention of 21st May 1963 on Civil Liability for Nuclear Damage or any amendments to those Conventions, or
- 11) if the operator of a nuclear installation is liable for such damage by virtue of national law governing the liability for such damage, provided that such law is in all respects as favourable to persons who may suffer damage as either the Paris or Vienna Conventions as referred to under (1),".

The Convention has been opened for signature from 1st February to 31st December 1990.

## • *Commission of the European Communities*

**COUNCIL DIRECTIVE  
of 27th November 1989  
on informing the general public about health protection measures  
to be applied and steps to be taken in the event of a  
radiological emergency  
(89/618/Euratom)  
[Published in the OJEC No. L 357 of 7th December 1989]**

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Article 31 thereof,

Having regard to the proposal from the Commission, submitted following consultation with a group of persons appointed by the Scientific and Technical Committee from among scientific experts in the Member States, as laid down in that Article,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas Article 2(b) of the Treaty lays down that the Community shall establish uniform safety standards to protect the health of workers and of the general public;

Whereas, on 2nd February 1959, the Council adopted Directives laying down the basic standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiations, as last amended by Directives 80/836/Euratom and 84/467/Euratom,

Whereas, pursuant to Article 24 of Directive 80/836/Euratom, all Member States must ensure that exposed workers receive adequate information on radiation protection,

Whereas, pursuant to Article 45(4) of the said Directive, each Member State must, in the event of an accident, stipulate the intervention levels and measures to be taken by the competent authorities and the necessary resources



both in personnel and equipment to enable action to be taken to safeguard and maintain the health of the general public,

Whereas, at Community level, further elements should be added to the information made available to the public over and above the areas already covered by Article 6(2) of Council Directive 85/337/EEC of 27th June 1985 on the assessment of the effects of certain public and private projects on the environment and by Article 8(1) of Council Directive 82/501/EEC of 24th June 1982 on the major accident hazards of certain industrial activities, as amended by Directive 88/610/EEC,

Whereas all Member States have signed the International Atomic Energy Agency (IAEA) Convention on Early Notification of a Nuclear Accident,

Whereas Council Decision 87/600/Euratom of 14th December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency requires all Member States which decide to take emergency measures to protect the general public, either as a result of abnormally high levels of radioactivity in the environment, or following an accident from which a significant release of radioactive material occurs or is likely to occur, to notify the Commission and the Member States which are, or are likely to be, affected, of the protective measures which they have taken or planned and also of any measures which they have taken or planned to inform the general public,

Whereas some Member States have already concluded bilateral agreements on information, co-ordination and mutual assistance in the event of a nuclear accident;

Whereas, in the event of an accident in a nuclear installation in a Member State, the population affected should be encouraged to take appropriate action likely to increase the effectiveness of the emergency measures taken or planned,

Whereas the sections of the population likely to be affected by the radiological emergency should therefore be given in advance appropriate and continuing information on the planned health protection measures relating to them and the action they should take in the event of a radiological emergency; whereas certain joint principles and specific provisions for informing such sections of the population should be drawn up for this purpose at Community level,

Whereas joint principles and specific provisions for informing the population actually affected by a real radiological emergency should also be drawn up,

Whereas account must also be taken, in the information supplied, of those sections of the population living in frontier areas,

Whereas, moreover, efforts should be made to strengthen the measures and practices for informing the general public already in force at national level in the event of a radiological emergency,

**HAS ADOPTED THIS DIRECTIVE**

## **Title I**

### **Objectives and definitions**

#### **Article 1**

This Directive is intended to define, at Community level, common objectives with regard to measures and procedures for informing the general public for the purpose of improving the operational health protection provided in the event of a radiological emergency.

#### **Article 2**

For the purposes of this Directive, "a radiological emergency" means any situation

1. that follows:
  - a) an accident in the territory of a Member State involving facilities or activities referred to in point 2 from which a significant release of radioactive material occurs or is likely to occur, or
  - b) the detection, within or outside its own territory, of abnormal levels of radioactivity which are likely to be detrimental to public health in that Member State, or
  - c) accidents other than those specified in (a) involving facilities or activities referred to in point 2 from which a significant release of radioactive material occurs or is likely to occur, or
  - d) other accidents from which a significant release of radioactive material occurs or is likely to occur;
2. that is attributable to the facilities or activities referred to in point 1(a) and (c), viz.:
  - a) any nuclear reactor, wherever located;
  - b) any other nuclear fuel cycle facility;
  - c) any radioactive waste management facility,
  - d) the transport and storage of nuclear fuels or radioactive wastes,
  - e) the manufacture, use, storage, disposal and transport of radioisotopes for agricultural, industrial, medical and related scientific and research purposes; and
  - f) the use of radioisotopes for power generation in space vehicles

### Article 3

For the purposes of applying this Directive, the terms "significant release of radioactive material" and "abnormal levels of radioactivity which are likely to be detrimental to public health" are to be understood as covering situations likely to result in members of the public being exposed to doses in excess of the dose limits prescribed under the Directives laying down basic Community safety standards for radiological protection.

### Article 4

For the purposes of this Directive, the following terms shall have the meanings hereby assigned

- a) population likely to be affected in the event of a radiological emergency:

any population group for which Member States have drawn up intervention plans in the event of a radiological emergency,

- b) population actually affected in the event of a radiological emergency:

any population group for which specific protection measures are taken as soon as a radiological emergency occurs

## **Title II**

### **Prior information**

### Article 5

1. Member States shall ensure that the population likely to be affected in the event of a radiological emergency is given information about the health protection measures applicable to it and about the action it should take in the event of such an emergency

2. The information supplied shall at least include the elements set out in Annex I.

3. This information shall be communicated to the population referred to in paragraph 1 without any request being made

4. Member States shall update the information and circulate it at regular intervals and whenever significant changes in the arrangements that it describes take place. This information shall be permanently available to the public.

### **Title III**

#### **Information in the event of a radiological emergency**

##### **Article 6**

1 Member States shall ensure that, when a radiological emergency occurs, the population actually affected is informed without delay of the facts of the emergency, of the steps to be taken and, as appropriate to the case in point, of the health protection measures applicable to it

2 The information provided shall cover the points contained in Annex II which are relevant to the type of radiological emergency.

### **Title IV**

#### **Information of persons who might be involved in the organisation of emergency assistance in the event of a radiological emergency**

##### **Article 7**

1 Member States shall ensure that any persons who are not on the staff of the facilities and/or not engaged in the activities defined in Article 2(2) but who might be involved in the organisation of emergency assistance in the event of a radiological emergency are given adequate and regularly updated information on the risks to their health their intervention might involve and on the precautionary measures to be taken in such an event, this information shall take into account the range of potential radiological emergencies

2 As soon as a radiological emergency occurs, this information shall be supplemented appropriately, having regard to the specific circumstances

### **Title V**

#### **Implementation procedures**

##### **Article 8**

The information referred to in Articles 5, 6 and 7 shall also mention the authorities responsible for implementing the measures referred to in those Articles.

## Article 9

Procedures for circulating the information referred to in Articles 5, 6 and 7 and those to whom the information shall be addressed (natural and legal persons) shall be determined in each Member State

## Article 10

1. The information referred to in Article 5 shall be notified to the Commission, if it so requests, without prejudice to the Member States' right to notify this information to other States.

2. The information circulated by a Member State, pursuant to Article 6, shall be notified to the Commission and to those Member States which are, or are likely to be, affected.

3. With respect to the information referred to in Article 7, the data relevant to the radiological emergency shall be notified to the Commission, at its request, as soon as possible and in so far as this is feasible

## **Title VI**

### **Final provisions**

## Article 11

This Directive shall not affect the right of the Member States to apply or adopt measures to provide information additional to that required under this Directive

## Article 12

Member States shall take the measures necessary to comply with this Directive not later than 24 months after its adoption. They shall forthwith inform the Commission thereof as well as of any further amendments thereto

## Article 13

This Directive is addressed to the Member States

## **ANNEX I**

### **Prior information referred to in Article 5**

- 1 Basic facts about radioactivity and its effects on human beings and on the environment.
- 2 The various types of radiological emergency covered and their consequences for the general public and the environment
3. Emergency measures envisaged to alert, protect and assist the general public in the event of a radiological emergency.
4. Appropriate information on action to be taken by the general public in the event of a radiological emergency

## **ANNEX II**

### **Information in the event of a radiological emergency referred to in Article 6**

1. On the basis of the intervention plans previously drawn up in the Member States, the population actually affected in the event of a radiological emergency will rapidly and regularly receive.
  - a) information on the type of emergency which has occurred and, where possible, its characteristics (e.g. its origin, extent and probable development),
  - b) advice on protection which, depending on the type of emergency, might
    - cover the following: restrictions on the consumption of certain foodstuffs likely to be contaminated, simple rules on hygiene and decontamination, recommendations to stay indoors, distribution and use of protective substances, evacuation arrangements,
    - be accompanied, where necessary, by special warnings for certain population groups;
  - c) announcements recommending co-operation with instructions or requests by the competent authorities
2. If the emergency is preceded by a pre-alarm phase, the population likely to be affected in the event of a radiological emergency should already receive information and advice during that phase, such as

- an invitation to the population concerned to tune in to radio or television,
- preparatory advice to establishments with particular collective responsibilities,
- recommendations to occupational groups particularly affected.

3. This information and advice will be supplemented if time permits by a reminder of the basic facts about radioactivity and its effects on human beings and on the environment.

**COUNCIL REGULATION (EEC) No. 737/90  
of 22nd March 1990  
on the conditions governing imports of agricultural products originating  
in third countries following the accident at the Chernobyl  
nuclear power station  
[Published in OJEC No. L 82 of 29th March 1990]**

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 113 thereof,

Having regard to the proposal from the Commission,

Whereas, following the accident at the Chernobyl nuclear power station on 26th April 1986, considerable quantities of radioactive elements were released into the atmosphere;

Whereas 3955/87, as amended by 4003/89, fixed maximum permitted levels of radioactivity for agricultural products originating in third countries and intended for human consumption with which imports of the products concerned must comply and in connection with which checks are carried out by the Member States, whereas that Regulation applies only until 31st March 1990,

Whereas, without prejudice to the possibility of resorting, where necessary, in the future to the provisions of Council Regulation (Euratom) No 3954/87 of 22nd December 1987 laying down maximum permitted radioactivity levels for foodstuffs and feedingstuffs following a nuclear accident or any other case of radiological emergency, as amended by Regulation (Euratom) No 2218/89, the Community must continue to ensure, with regard to the specific effects of the accident at Chernobyl, that agricultural products and processed agricultural products intended for human consumption and likely to be contaminated are introduced into the Community only according to common arrangements,

Whereas these common arrangements should safeguard the health of consumers, maintain, without having unduly adverse effects on trade between the Community and third countries, the unified nature of the market and prevent deflections of trade;

Whereas the reasons prevailing when Regulation (EEC) No 3955/87 was adopted are still valid, particularly on account of the fact that radioactive contamination in certain agricultural products originating in the third countries affected by the accident still exceed the maximum permitted levels of radioactivity laid down in that Regulation;

Whereas compliance with the maximum permitted levels must be the subject of appropriate checks, which may lead to prohibiting imports in cases of non-compliance;

Whereas radioactive contamination in many agricultural products has decreased and will continue to decrease to the levels existing before the Chernobyl accident, whereas a procedure should therefore be established enabling such products to be excluded from the scope of the above-mentioned Regulation,

Whereas, since this Regulation covers all agricultural products and processed agricultural products intended for human consumption, there is no need, in the present case, to apply the procedure provided for in Article 29 of Directive 72/462/EEC;

Whereas, in order to clarify or adjust, as necessary, the measures provided for by this Regulation, a simplified procedure should be established,

HAS ADOPTED THIS REGULATION:

#### Article 1

With the exception of the products unfit for human consumption listed in Annex I\* and those products which may come to be excluded from the scope of this Regulation pursuant to the procedure laid down in Article 7, this Regulation shall apply to the products originating in third countries covered by:

- Annex II to the Treaty,
- Council Regulation (EEC) No 2730/75 of 29th October 1975 on glucose and lactose, as amended by Commission Regulation (EEC) No 222/88,

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\* This Annex is not reproduced. Some examples are given instead of the products listed therein as unfit for human consumption: race horses, fine ornamental fish, rice for sowing, tallow oil for industrial uses, etc. Note by the Secretariat



- Council Regulation (EEC) No 2783/75 of 29th October 1975 on the common system of trade for ovalbumin and lactalbumin, as amended by Commission Regulation (EEC) No 4001/87,
- Council Regulation (EEC) No 3033/80 of 11th November 1980 laying down the trade arrangements applicable to certain goods resulting from the processing of agricultural products, as amended by Commission Regulation (EEC) No. 3743/87,
- Council Regulation (EEC) No 3035/80 of 11th November 1980 laying down general rules for granting export refunds on certain agricultural products exported in the form of goods not covered by Annex II to the Treaty, and the criteria for fixing the amount of such refunds, as last amended by Regulation (EEC) No 3209/88

## Article 2

Without prejudice to other provisions in force, the release for free circulation of the products referred to in Article 1 shall be subject to compliance with the maximum permitted levels laid down in Article 3

## Article 3

The maximum permitted levels referred to in Article 2 shall be as follows:

the accumulated maximum radioactive level in terms of caesium-134 and -137 shall be:

- 370 Bq/kg for milk and milk products listed in Annex II\* and for foodstuffs intended for the special feeding of infants during the first four to six months of life, which meet, in themselves, the nutritional requirements of this category of person and are put up for retail sale in packages which are clearly identified and labelled "food preparation for infants",
- 600 Bq/kg for all other products concerned

## Article 4

1 Member States shall check compliance with the maximum permitted levels set in Article 3 in respect of the products referred to in Article 1, taking into account contamination levels in the country of origin. Checking may also include the presentation of export certificates. Depending on the results of the checks carried out, Member States shall take the measures required for Article 2 to apply, including the prohibition of release for free circulation, taking each case individually or generally for a given product.

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\* This Annex is not reproduced. It does not name the products but simply refers to their CN (combined nomenclature) code numbers. Note by the Secretariat

2. Each Member State shall provide the Commission with all information concerning the application of this Regulation, notably cases of non-compliance with the maximum permitted levels. The Commission shall circulate such information to the other Member States

#### Article 5

Where cases of repeated non-compliance with the maximum permitted levels have been recorded, the necessary measures may be taken in accordance with the procedure laid down in Article 7. Such measures may even include the prohibition of the import of products originating in the third country concerned

#### Article 6

The arrangements for applying this Regulation, any amendments to be made to the products in Annex I, and the list of products excluded from this Regulation shall be adopted in accordance with the procedure laid down in Article 7

#### Article 7

1. The Commission shall be assisted by an ad hoc committee composed of the representatives of the Member States and chaired by the representative of the Commission

2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft within a limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the committee shall be weighted in the manner set out in that Article. The chairman shall not vote

3. The Commission shall adopt measures which shall apply immediately. However, if these measures are not in accordance with the opinion of the committee, they shall be communicated by the Commission to the Council forthwith. In that event

- the Commission may defer application of the measures which it has decided for a period of not more than one month from the date of such communication,
- the Council, acting by a qualified majority, may take a different decision within the time limit referred to in the first indent

## Article 8

This Regulation shall enter into force on 1st April 1990

It shall expire on 31st March 1995, unless the Council decides otherwise at an earlier date, particularly should the list of excluded products referred to in Article 6 cover all the products fit for human consumption to which this Regulation applies.

This Regulation shall be binding in its entirety and directly applicable in all Member States

**COMMISSION REGULATION (EURATOM) No. 770/90  
of 29th March 1990  
laying down maximum permitted levels of radioactive contamination of  
feedingstuffs following a nuclear accident or any other case of  
radiological emergency  
[Published in OJEC No. L 83 of 30th March 1990]**

**THE COMMISSION OF THE EUROPEAN COMMUNITIES,**

Having regard to the Treaty establishing the European Economic Community,

Having regard to Council Regulation (Euratom) No 3954/87 of 22nd December 1987 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency, as amended by Regulation (Euratom) No. 2218/89, and in particular Article 7 thereof,

Whereas, in accordance with Regulation (Euratom) No 3954/87, the Commission shall adopt maximum levels of radioactive contamination to be applied to feedingstuffs,

Whereas the group of experts appointed by the Scientific and Technical Committee pursuant to Article 31 of the Euratom Treaty, has been consulted,

Whereas consideration of the relative quantities of individual radionuclides liable to be released in the event of a nuclear accident in conjunction with their half-lives and transfer from feedingstuffs to animal produce leads to the conclusion that maximum permitted levels of radioactive contamination of feedingstuffs are needed only for the caesium isotopes,

Whereas the measures provided for in this Regulation are in accordance with the opinion of the ad hoc Committee instituted by Regulation (Euratom) No. 3954/87,

HAS ADOPTED THIS REGULATION.

### Article 1

Maximum permitted levels of radioactive contamination of feedingstuffs are set out in the Annex

### Article 2

This Regulation shall enter into force on the third day following its publication in the Official Journal of the European Communities

This Regulation shall be binding in its entirety and directly applicable in all Member States.

### ANNEX

#### MAXIMUM PERMITTED LEVELS OF RADIOACTIVE CONTAMINATION (CAESIUM-134 AND CAESIUM-137) OF FEEDINGSTUFFS

Animal	Bq/kg <sup>1 2</sup>
Pigs	1 250
Poultry, lambs, calves	2 500
Other	5 000

1. These levels are intended to contribute to the observance of the maximum permitted levels for foodstuffs, they do not alone guarantee such observance in all circumstances and do not lessen the requirement for monitoring contamination levels in animal products destined for human consumption.
2. These levels apply to feedingstuffs as ready for consumption.

# BIBLIOGRAPHY

## ● *Belgium*

Trente ans d'expérience Euratom. la naissance d'une Europe nucléaire, by O Pirotte, P Girerd, P Marsal and S Morson, published by Etablissements Emile Bruylant, Brussels, 1988, 427 pages

In the introduction to this book, which deals exhaustively with a particularly complex subject, the authors recall the fundamental point at the root of the creation of the European Atomic Energy Community (Euratom) and stated in the SPAAK report, namely that none of their countries was able to undertake the immense research and make the basic investments required to launch the technical revolution made possible by the atomic age. This same report concluded that all those countries, together, were capable of developing jointly a nuclear industry and that they were the only region in the world which could be on the level of the great world powers. However, as a consequence of the European disunion, separately, they could not catch up with their delay. In perspective, nevertheless, it should be noted that this ambition has not been entirely achieved. Although it followed the same approach as that of the ECSC Treaty, that of integration by sector, Euratom was far from evolving similarly; and more than twenty-five years after ratification of the EAEC Treaty, the nuclear sector is still affected by tensions due to the prevalent political desire of the Member States to act alone and the need for joint action. However different from the initial intentions of the authors of the Euratom Treaty, the resulting nuclear structure is nonetheless considerable and is the subject matter of this book.

After having described the origins of the Euratom Treaty and, in particular, the delicate compromises when setting up the atomic Community, the first part of this study analyses the Euratom Treaty, notably its provisions on research and dissemination of information, health and safety, joint undertakings, the regime for nuclear materials and control of their peaceful uses before dealing with the reconsideration of the supranational provisions of that Treaty (in particular, the difficulties connected with the implementation of the Chapter on Supplies)

Part II is entitled Euratom and international pressures. Noting European dependence regarding raw mineral resources and enriched uranium, the authors explain how Euratom progressively broke free by diversifying supplies. Development of technologies is also a way of doing away with these external constraints, as shown by the progress achieved in the field of fast breeder reactors, reprocessing and uranium enrichment. Euratom also had to define its

position in the framework of the world policy of non-proliferation of nuclear weapons, in particular, in the context of the NPT and the IAEA Safeguards System, the agreements between exporting countries and the policy of certain supplying countries such as, for example, the United States

Part III discusses how a stabilisation of Euratom's action was sought with regard to the policies of certain Member countries and from the viewpoint of the Community's external relations. Also discussed are the questions linked to financing the European nuclear policy, actions to improve the safety of nuclear installations and the establishment of a form of energy for the future. thermonuclear fusion.

The general conclusion recaps the evolution of the Communities' nuclear structure as compared to the initial objectives and attempts to outline future prospects in the present political context

## ● France

Protection contre les rayonnements ionisants, hygiène et securite no 1420, Journal officiel de la Republique française, Vols. I and II, 6th edition, 1990 613 pages

This compilation of radiation protection legislation has been published in the Health and Safety Series of the Official Gazette of the French Republic. It is intended for persons applying the legislative and regulatory provisions on radiation protection, namely, doctors concerned with public health and occupational medicine, radiologists, hygienists, etc.

This publication contains all the texts relating to radiation protection, including provisions with a more general scope. The fields covered include protection of the public and the environment, protection of workers in the nuclear industry and radiation workers, as well as protection in mining and defence work.

French legislation on radiation protection implements the recommendations of the Radiological Commission on Radiological Protection (ICRP) and conforms to the Community Directives on the subject.

## ● *German Democratic Republic*

Neue Rechtsvorschriften auf dem Gebiet der Atomsicherheit und des Strahlenschutzes, Staatliches Amt für Atomsicherheit und Strahlenschutz, Report SAAS-327, published by the Präsident des Staatlichen Amtes für Atomsicherheit und Strahlenschutz der Deutschen Demokratischen Republik, DDR - 1157 Berlin-Karlshorst, Waldowallee 117, 1985, 83 pages

This Report SAAS-327 (SAAS stands for Staatliches Amt für Atomsicherheit und Strahlenschutz, i.e. State Board for Nuclear Safety and Radiation Protection) contains a compilation of the nuclear legislation of the German Democratic Republic. The complete texts of the following laws and regulations are reproduced.

- Atomic Energy Act of 8th December 1983,
- Ordinance implementing the Atomic Energy Act - protected areas for nuclear installations of 8th December 1983,
- Ordinance of 11th October 1984 concerning the Implementation of Nuclear Safety and Radiation Protection;
- Regulation of 11th October 1984 executing the above Ordinance,
- Regulation concerning the Central Registration and Disposal of Radioactive Wastes of 11th May 1981

The Report lists a further 57 laws, ordinances, regulations and directives in the field of nuclear safety and radiation protection and gives their publication sources. In addition, the titles and reference numbers of the radiation protection standards published until 1985 are reproduced. An updated version of this list has been published in 1989 (Mittellungen des Staatlichen Amtes für Atomsicherheit und Strahlenschutz, 1989, No. 6).

## ● *Norway*

Twenty Years of the Non-Proliferation Treaty Implementation and Prospects, by Jozef Goldblat, published by the International Peace Research Institute (PRIO), Oslo, 1990, 162 pages

The Treaty on the Non-Proliferation of Nuclear Weapons was signed in 1968 and entered into force in 1970. In 1995 a conference will be held to

decide whether the Treaty is to remain in force indefinitely or be extended for further periods. In addition, the Treaty provides for five-yearly review conferences, the fourth of which is to be held in August-September of this year. This book has been published in the perspective of these forthcoming conferences.

The author's purpose is to assess the achievements and weaknesses of the Treaty and to suggest ways in which the non-proliferation regime might be strengthened. The book provides a brief explanation of the Treaty, the safeguards arrangements under the Treaty and of the measures related to the 1980 Convention on the Physical Protection of Nuclear Material. It notes the high number of adherents to the Non-Proliferation Treaty, explaining the attitudes and practices of members as well as those of non-members active in the nuclear field. It then focusses on a number of specific issues including missiles capable of delivering both conventional and nuclear weapons (nuclear-capable missiles), peaceful nuclear explosions, nuclear naval propulsion, plutonium stockpiles, disarmament obligations of nuclear weapon states, security assurances for non-nuclear weapon states, nuclear weapon-free zones. To conclude, an outline is given of the achievements of the five-yearly review conferences held to date and recommendations are made as to measures which might be contemplated to reinforce the generally positive trend which the author identifies in the achievements under the Treaty.

The book is completed by useful appendices containing, inter alia, the relevant treaties and international guidelines.

## ● NEA

### International Dossier on Nuclear Waste Programmes in OECD Countries, OECD Nuclear Energy Agency, Paris 1990

The OECD Nuclear Energy Agency (NEA) has co-ordinated the publication of a series of brochures prepared by twelve of its Member countries to describe their radioactive waste management programmes. These brochures have been produced in an easily understandable language and common format to inform the public in each of the participating countries about their own programme and similar programmes in other countries.

Radioactive waste management programmes in OECD countries cover a wide range of activities aimed at the gradual implementation of disposal methods for various types of waste. Emphasis is placed on the institutional and regulatory framework, on research and development activities and on site selection and characterisation. Although disposal concepts and systems vary in detail from country to country, their overall programmes are broadly comparable.



## ● IAEA

### Bilateral, Regional and Multilateral Agreements relating to Co-operation in the Field of Nuclear Safety, Legal Series No 15, IAEA, Vienna, 1990, 543 pages

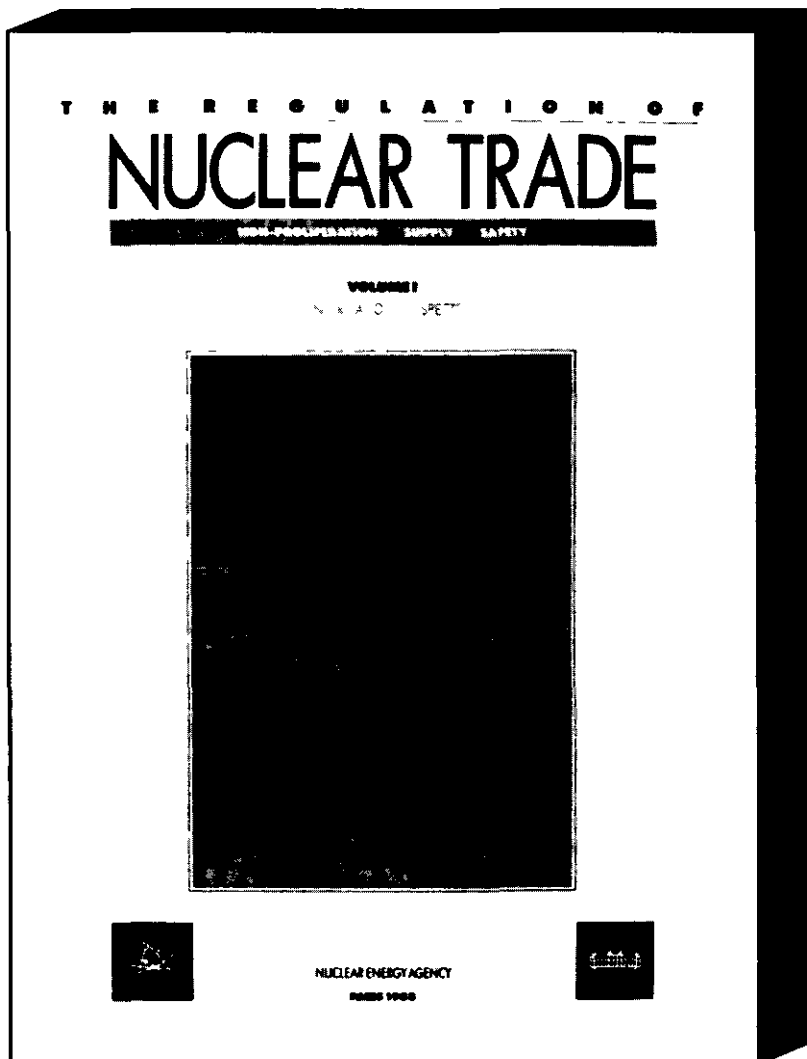
This book is a compilation of facsimile copies of bilateral, regional and multilateral agreements concluded by Member States of the International Atomic Energy Agency relating to co-operation in the field of nuclear safety

Part I contains the bilateral agreements in the language versions provided by Member States. Titles of agreements provided in a language other than English have been translated into English. Part II consists of regional and Part III of multilateral agreements in the above field

In addition to earlier agreements on nuclear safety, radiation protection and assistance in case of catastrophes, the bilateral agreements include, in particular, the series of agreements concluded in furtherance of the 1986 IAEA Convention on Early Notification of a Nuclear Accident

The regional agreements include, inter alia, the Council of the European Communities' 1987 Decision on Community arrangements for early exchange of information in the event of a radiological emergency, while the multilateral agreements cover the 1986 IAEA Convention on Mutual Assistance in the Case of a Nuclear Accident or Radiological Emergency and the other above-mentioned IAEA Convention. The status of the Conventions as of 31st July 1989 is also given





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# NUCLEAR LAW

## Bulletin

S U P P L E M E N T T O No. 45

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- ORDINANCE OF 6th MARCH 1962 FOR THE ENFORCEMENT OF THE ABOVE LAW, AS LAST AMENDED ON 17th NOVEMBER 1989 (CABINET ORDER No. 44)
- THE LAW OF 17th JUNE 1961 ON INDEMNITY AGREEMENTS FOR COMPENSATION OF NUCLEAR DAMAGE, AS LAST AMENDED ON 27th MAY 1988 (LAW No. 148)

June 1990



# ● Japan ●

## THE LAW ON COMPENSATION FOR NUCLEAR DAMAGE\* (Law No. 147 of 17th June 1961, as last amended on 31st March 1989)

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### Supplementary Provisions

### Part I General Provisions

#### (Purpose) Section 1

It is the purpose of this Law to protect persons suffering from nuclear damage and also to contribute to the sound development of nuclear industry by establishing the basic system regarding compensation in case of the occurrence of nuclear damage through reactor operation, etc.

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\* Unofficial translation by the Secretariat.

**(Definitions)**  
**Section 2**

As used in this Law, "reactor operation, etc." means any activity which comes under any one of the following cases below and incidental transport or storage of nuclear fuel material or material contaminated by nuclear fuel material [including nuclear fission products; this is also the case in sub-paragraph (v)], as provided by Cabinet Order:

- i) reactor operation;
- ii) fabricating;
- iii) reprocessing;
- iv) use of nuclear fuel material;
- v) waste disposal of nuclear fuel material or material contaminated by nuclear fuel material (referred to as "nuclear fuel material, etc." in the following paragraph and the following Section, paragraph 2).

2. As used in this Law, "nuclear damage" means any damage caused by the effects of the fission process of nuclear fuel material, or of the radiation from nuclear fuel material, etc., or of the toxic nature of such materials (which means effects that give rise to toxicity or its secondary effects on the human body by ingesting or inhaling such materials); however, the damage suffered by the nuclear operator who is liable for such damage pursuant to the following Section, is excluded.

3. As used in this Law, "nuclear operator" means any person as specified under any one of the following sub-paragraphs (including a person who had been deemed so previously).

- i) A person who is granted a permit [including approval; this also applies for sub-paragraphs (ii), (ii)-3, and (iii)] as provided in Section 23 paragraph 1 of the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Law No. 166, 1957; hereinafter referred to as "the Regulation Law"), (including a person who is regarded as a reactor operator pursuant to Section 39, aragraph 5 of the Regulation Law).
- i)-2 A person who is granted a permit as provided in Section 23-2, paragraph 1 of the Regulation Law.
- ii) A person who is granted a licence as provided in Section 13, paragraph 1 of the Regulation Law.
- ii)-2 A person who is granted an authorisation as provided in Section 44, paragraph 1 of the Regulation Law.
- ii)-3 A person who is granted a licence as provided in Section 51-2, paragraph 1 of the Regulation Law.



- iii) A person who is granted a licence as provided in Section 52, paragraph 1 of the Regulation Law.
- iv) The Japan Atomic Energy Research Institute.
- v) The Power Reactor and Nuclear Fuel Development Corporation.

4. As used in this Law, "reactor" means a reactor as provided in Section 3, paragraph 4 of the Atomic Energy Basic Law (Law No. 186, 1955), "nuclear fuel material" means nuclear fuel material as provided in Section 3, paragraph 2 of the Atomic Energy Basic Law (including spent fuel as provided in Section 2, paragraph 8 of the Regulation Law), "fabricating" means fabricating as provided in Section 2, paragraph 7 of the Regulation Law, "reprocessing" means reprocessing as provided in Section 2, paragraph 8 of the Regulation Law, "radiation" means radiation as provided in Section 3, paragraph 5 of the Atomic Energy Basic Law, and "nuclear ship" and "foreign nuclear ship" mean nuclear ship and foreign nuclear ship as provided in Section 23-2, paragraph 1 of the Regulation Law.

## Part II Liability for Nuclear Damage

### Chapter 1 - Financial Security

(Liability without fault, channelling of liability, etc.)  
Section 3

Where nuclear damage is caused as a result of reactor operation, etc. during such operation, the nuclear operator who is engaged in the reactor operation, etc. on this occasion shall be liable for the damage, except in the case where the damage is caused by a grave natural disaster of an exceptional character or by an insurrection.

2. Where nuclear damage is covered by the preceding paragraph and if the damage is caused as a result of the transport of nuclear fuel material, etc. between nuclear operators, the nuclear operator who is the consignor of the nuclear fuel material, etc. shall be liable for the damage unless there is a special agreement between the nuclear operators.

#### Section 4

Where nuclear damage is covered by the preceding Section, no person other than the nuclear operator who is liable for the damage pursuant to the preceding Section shall be liable for the damage.

2. Where nuclear damage is covered by the preceding Section paragraph 1, the liability of a nuclear operator who furnishes the financial security as provided in Section 7-2 paragraph 2 and wants a foreign nuclear ship to enter

into the Japanese water basin is limited to the amount as provided in Section 7-2 paragraph 2.

3. The provisions of Section 798 paragraph 1 of the Commercial Law (Law No. 48, 1899) and the Law relating to the Limitation of the Liability of Shipowners (Law No. 94, 1975) shall not apply to nuclear damage which is caused as a result of reactor operation, etc.

(Rights of recourse)  
Section 5

Where nuclear damage is covered by Section 3 and if the damage is caused by the wilful act of a third party, the nuclear operator who has compensated the damage pursuant to Section 3 retains a right of recourse against such a third party.

2. The provision of the preceding paragraph shall not prevent a nuclear operator from entering into a special agreement with any person regarding rights of recourse.

**Part III**  
**Financial Security**

(Duty to provide financial security)  
Section 6

A nuclear operator is prohibited from reactor operation, etc. unless financial security for compensation of nuclear damage (hereinafter referred to as "financial security") has been provided.

(Details of financial security)  
Section 7

Financial security, except when the provisions of the following Section are applicable, shall be provided by the conclusion of a contract of liability insurance for nuclear damage and an indemnity agreement for compensation of nuclear damage or by a deposit, which are approved by the Director-General of the Science and Technology Agency, as an arrangement that makes available for compensation of nuclear damage, 30 billion yen (in case of such reactor operation, etc. the Cabinet Order may provide for a lesser amount than 30 billion yen; hereinafter this amount is referred to as "financial security amount") per one plant or one site or one nuclear ship, or by an equivalent arrangement which is approved by the Director-General of the Science and Technology Agency.

2. Where the amount available for compensation of nuclear damage falls below the financial security amount because the nuclear operator has paid compensation for nuclear damage pursuant to Section 3, the Director-General of the Science and Technology Agency may, if he deems it necessary to ensure full

compensation of nuclear damage, order the nuclear operator to bring the amount available for compensation of nuclear damage up to the financial security amount by a given time.

3. In the case provided for in the preceding paragraph, the preceding Section shall not apply until the Order is made pursuant to the preceding paragraph (until the time designated by the order, where such an Order has been made pursuant to the preceding paragraph).

#### Section 7-2

Where a nuclear operator wants a nuclear ship to enter into foreign waters, financial security shall be provided by the conclusion of a contract of liability insurance for nuclear damage and an indemnity agreement for compensation of nuclear damage or by other financial security, which are approved by the Director-General of the Science and Technology Agency, as an arrangement that is sufficient for compensation of nuclear damage, in the amount agreed between the Government of Japan and the Government of such foreign country, arranged by the nuclear operator of the nuclear ship who is liable for compensation of nuclear damage.

2. Where a nuclear operator wants a foreign nuclear ship to enter into the Japanese water basin, the financial security shall be that approved by the Director-General of the Science and Technology Agency, as an arrangement that is sufficient for compensation of nuclear damage, in the amount (not less than 36 billion yen in respect of any one event attributed to nuclear damage) agreed between the Government of Japan and the Government of such foreign country, arranged by the nuclear operator of the foreign nuclear ship liable for compensation of nuclear damage.

### **Chapter 2. Contract of Liability Insurance for Nuclear Damage**

(Contract of liability insurance for nuclear damage)

#### Section 8

The contract of liability insurance for nuclear damage (hereinafter referred to as "liability insurance contract") shall be the contract under which an insurer (a person who is authorized to engage in liability insurance activities pursuant to the Insurance Business Law (Law No. 41, 1939) or the Law regarding Foreign Insurers (Law No. 184, 1949); hereinafter an insurer is limited to this meaning) undertakes to indemnify a nuclear operator for his loss arising from compensating nuclear damage, where the nuclear operator becomes liable for such nuclear damage, and under which that operator has undertaken to pay a premium to the insurer.

#### Section 9

Any person suffering from nuclear damage shall, with regard to his claim for such nuclear damage, have priority over other creditors in respect of compensation from the amount provided by the liability insurance contract.

2. The insured may request the insurer to make the insurance payment only to the extent of the amount of compensation which the insured has paid, or to the extent of which the insured has acquired the consent of persons suffering from nuclear damage.

3. The right to request insurance payment under the liability insurance contract shall not be assigned, mortgaged, seized; provided that a person suffering from nuclear damage may seize with regard to his claim for nuclear damage.

### **Chapter 3. Indemnity Agreements for Compensation of Nuclear Damage**

(Indemnity agreements for compensation of nuclear damage)

#### **Section 10**

An indemnity agreement for compensation of nuclear damage (hereinafter referred to as "indemnity agreement") shall be the contract by which the Government undertakes to indemnify a nuclear operator for his loss arising from compensating nuclear damage not covered by the liability insurance contract or other financial security for compensation of nuclear damage, where the nuclear operator becomes liable for such nuclear damage, and under which that operator has undertaken to pay an indemnity fee to the Government.

2. Matters regarding the indemnity agreement shall be provided by another Law.

#### **Section 11**

The provisions of Section 9 shall apply mutatis mutandis to the indemnity payment under the indemnity agreement.

### **Chapter 4. Deposit**

(Deposit)

#### **Section 12**

A deposit for financial security shall be made in the Legal Affairs Bureau or the District Legal Affairs Bureau nearest to the main office of the nuclear operator, either in cash or in securities as provided by the Order of the Prime Minister's Office.

(Payment from deposit)  
Section 13

Any person suffering from nuclear damage may, with regard to his claim for such nuclear damage, receive compensation from the cash or securities deposited by the nuclear operator pursuant to the preceding Section.

(Withdrawal of deposit)  
Section 14

A nuclear operator may, in the following cases, withdraw the cash or securities deposited pursuant to Section 12 with approval of the Director-General of the Science and Technology Agency where:

- i) the nuclear damage has been compensated;
- ii) financial security other than the deposit has been provided;
- iii) reactor operation, etc. has ceased.

2. When the Director-General of the Science and Technology Agency grants an approval in case of the preceding sub-paragraphs (ii) and (iii), he may, to the extent that he deems it necessary to ensure full compensation of nuclear damage, designate the time when, and the amount of the cash or securities which the nuclear operator can withdraw.

(Specifications by Orders)  
Section 15

Matters regarding the deposit other than those provided in this Chapter shall be provided by Orders of the Prime Minister's Office and the Ministry of Justice.

**Part IV**  
**Measures taken by the State**

Section 16

Where nuclear damage occurs, the Government shall give a nuclear operator (except the nuclear operator of a foreign nuclear ship) such aid as is required for him to compensate the damage, when the actual amount which he should pay for the nuclear damage pursuant to Section 3 exceeds the financial security amount and when the Government deems it necessary to attain the purpose of this Law.

2. Aid as provided for in the preceding paragraph shall be given to the extent that the Government is authorised to do so by decision of the National Diet.

## Section 17

Where the provision for exoneration in Section 3, paragraph 1 applies or where nuclear damage is deemed to exceed the amount provided under Section 7-2, paragraph 2, the Government shall take the necessary measures to relieve victims and to prevent the damage from spreading.

### **Part V**

#### **Dispute Reconciliation Committee for Nuclear Damage Compensation**

#### **(Dispute Reconciliation Committee for Nuclear Damage Compensation)** Section 18

The Dispute Reconciliation Committee for Nuclear Damage Compensation (hereinafter referred to as "Reconciliation Committee") may be established as an organisation attached to the Science and Technology Agency, pursuant to the provisions laid down by Cabinet Order, which shall be in charge of mediating reconciliation of any dispute arising from compensation of nuclear damage.

2. **The Reconciliation Committee shall:**

- i) mediate reconciliation of any dispute arising from compensation of nuclear damage;
- ii) investigate and assess nuclear damage as necessary for dealing with the matters mentioned in (i) above.

3. Matters regarding the organisation and operation of the Reconciliation Committee as well as procedures of application and conduct of mediation other than those provided in paragraphs 1 and 2 shall be provided by Cabinet Order.

### **Part VI**

#### **Miscellaneous Provisions**

#### **(Presentation of report and written opinion to the National Diet)** Section 19

The Government shall, in case nuclear damage occurs on a comparatively large scale, report to the National Diet, as soon as possible, the state of damage and the measures taken by the Government pursuant to this Law.

2. The Government shall, in case nuclear damage occurs, present to the National Diet the written opinion regarding mitigation, prevention, etc. of the damage, which the Atomic Energy Commission or the Nuclear Safety Commission has presented to the Prime Minister.

(Application of Section 10, paragraph 1 and Section 16, paragraph 1)  
Section 20

The provisions of Section 10, paragraph 1 and Section 16, paragraph 1 shall apply to nuclear damage arising from reactor operation, etc. in respect of which the action, that comes under any one of sub-paragraphs mentioned in Section 2, paragraph 1, has begun by 31st December 1999.

(Submission of reports and inspection)  
Section 21

The Director-General of the Science and Technology Agency may, if he deems it necessary to ensure execution of the provisions of Section 6, require a nuclear operator to present any necessary reports or allow his officials to enter the latter's office, plant or site or his nuclear ship, to inspect his books, documents and other necessary objects, or to ask questions of the persons concerned.

2. When an official enters premises pursuant to the preceding paragraph, he shall carry an identification card and present it if requested by the persons concerned.

3. The authority to inspect pursuant to paragraph 1 shall not be construed as an inspection for a criminal offence.

(Consultations with the Minister of International Trade and Industry, or the Minister of Transport)  
Section 22

The Director-General of the Science and Technology Agency shall, when he takes action pursuant to Section 7, paragraph 1 or Section 7-2, paragraphs 1 or 2, or makes Orders pursuant to Section 7, paragraph 2, have prior consultations with the Minister of International Trade and Industry in cases related to reactors for electrical power generation, or with the Minister of Transport in cases related to reactors installed in vessels.

(Exclusion of application to the State)  
Section 23

The provisions of Part III, Section 16 and Part VII shall not apply to the State.

**Part VII**  
**Penal Provisions**

**Section 24**

A person who violates the provisions of Section 6 shall be punished by imprisonment of not more than one year, or by a fine not exceeding five hundred thousand yen, or both.

**Section 25**

A person shall be punished by a fine not exceeding two hundred thousand yen for:

- i) failing to present a report pursuant to Section 21, paragraph 1, or presenting a false report;
- ii) refusing, interrupting or evading entrance or inspection, or refusing to answer a question pursuant to Section 21, paragraph 1, or making a false answer to a question.

**Section 26**

When the representative of a legal entity, or the agent or other employee of a legal entity or of a person commits any one of the violations provided for in Sections 24 and 25 in connection with the business of the legal entity or the person, the legal entity and the person shall, in addition to punishment of the actual offender, be punished by a fine as provided in the respective Sections.

**Supplementary Provisions (Omitted)**



**ORDINANCE FOR THE ENFORCEMENT OF THE LAW ON COMPENSATION  
FOR NUCLEAR DAMAGE\***

**(Cabinet Order No. 44 of 6th March 1962,  
as last amended on 17th November 1989)**

The Cabinet has enacted this Cabinet Order pursuant to the provisions of Section 2, paragraph 1 and Section 7, paragraph 1 of the Law on Compensation for Nuclear Damage (Law No. 147, 1961).

(Reactor operation, etc.)

Section 1

Such activities provided for in the Cabinet Order referred to in Section 2, paragraph 1 of the Law on Compensation for Nuclear Damage (hereinafter referred to as "the Compensation Law") shall be the following:

- i) reactor operation;
- ii) fabricating the following nuclear fuel materials,
  - a) uranium or its compounds in which the ratio of uranium 235 to uranium 238 is higher than that of natural uranium but lower than five-hundredths, and any material which contains one or more of these nuclear materials, whenever these contain 2 000 grams or more by weight of uranium 235,
  - b) uranium or its compounds in which the ratio of uranium 235 to uranium 238 is higher than five-hundredths, and any material which contains one or more of these nuclear materials, whenever these contain 800 grams or more by weight of uranium 235,
  - c) plutonium or its compounds, and any material which contains one or more of these nuclear materials, whenever these contain 500 grams or more by weight of plutonium;
- iii) reprocessing;
- iv) use of the nuclear fuel materials mentioned in sub-paragraphs (ii)(a), (b) and (c);
- v) underground waste disposal and waste management as provided in Section 51-2, paragraph 1, sub-paragraphs (i) and (ii) of the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material

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\* Unofficial translation by the Secretariat.

and Reactors (Law No. 166, 1957, hereinafter referred to as "the Regulation Law") (hereinafter referred to as "underground waste disposal" and "waste management");

- vi) transport, storage and waste disposal of the following materials incidental to the activities mentioned in the foregoing sub-paragraphs,
  - a) nuclear fuel materials mentioned in sub-paragraphs (ii)(a), (b) and (c),
  - b) spent fuel as provided in Section 2, paragraph 7 of the Regulation Law (hereinafter referred to as "spent fuel"),
  - c) material contaminated by nuclear fuel material (including nuclear fission products; the same applies to the following provisions).

(Amount of financial security)  
Section 2

Such reactor operation, etc. and amount as provided in the Cabinet Order referred to in Section 7, paragraph 1 of the Compensation Law shall be the respective items in the following table. Provided, however, that reactor operation, etc. being performed as a combination at one and the same plant or site (or vessel in case reactors are installed in a vessel; the same applies to item (i) of the table) associates the relevant activities coming under two or more items from items (i) to (xi) of the table, the amount of financial security for the overall reactor operation, etc. shall be the highest individual amount required under the respective items in the table.

- |   |                |
|---|----------------|
| i) Operation of a reactor whose maximum thermal power exceeds 10 000 kWt (including transport, storage and waste disposal of nuclear fuel material or material contaminated by nuclear fuel material (hereinafter referred to as "nuclear fuel material, etc.") within the plant or on the site incidental to the operation of a reactor concerned; the same applies to items (ii) and (iii) of the table). | Yen 30 billion |
| ii) Operation of a reactor whose maximum thermal power exceeds 100 kWt but does not exceed 10 000 kWt.  | Yen 6 billion  |
| iii) Operation of a reactor whose maximum thermal power does not exceed 100 kWt.  | Yen 1 billion  |
| iv) Fabricating nuclear fuel material (excluding fabrication stipulated in the next item of the table, and including transport, storage and waste disposal of nuclear fuel material, etc. within the plant or on the site incidental to the fabrication concerned).   | Yen 1 billion  |

- |       |  |                |
|-------|--|----------------|
| v)    | Fabricating the nuclear fuel material mentioned in sub-paragraph (ii)(c) of the preceding Section (including transport, storage and waste disposal of nuclear fuel material, etc. within the plant or on the site incidental to the fabrication concerned).  | Yen 6 billion  |
| vi)   | Reprocessing (including transport, storage and waste disposal of nuclear fuel material, etc. within the plant or on the site incidental to the reprocessing concerned).  | Yen 30 billion |
| vii)  | Use of nuclear fuel material (excluding use stipulated in the next item of the table, and including transport, storage and waste disposal of nuclear fuel material, etc. within the plant or on the site incidental to the use concerned).   | Yen 1 billion  |
| viii) | Use of the nuclear fuel material mentioned in sub-paragraph (ii)(c) of the preceding Section (including transport, storage and waste disposal of nuclear fuel material, etc. within the plant or on the site incidental to the use concerned).   | Yen 6 billion  |
| ix)   | Underground waste disposal (excluding waste disposal stipulated in the foregoing items of the table, and including transport and waste disposal of nuclear fuel material, etc. on the site incidental to the underground waste disposal concerned).  | Yen 1 billion  |
| x)    | Waste management of vitrifying materials other than nuclear fuel material and other useful materials among materials separated from solutions of spent fuel (excluding waste disposal stipulated in item (vi) of the table, and including transport and waste disposal of nuclear fuel material, etc. on the site incidental to the waste management concerned). | Yen 6 billion  |
| xi)   | Waste management other than that stipulated in the preceding item of the table (excluding waste disposal stipulated in items (i) and (ix) of the table, and including transport and waste disposal of nuclear fuel material, etc. on the site incidental to the waste management concerned).   | Yen 1 billion  |
| xii)  | Transport of nuclear fuel material, etc. incidental to reactor operation, fabricating, reprocessing, use of nuclear fuel material, underground waste disposal, and waste   | Yen 1 billion  |

management (excluding transport stipulated in other items of the table).

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|-------|--|---------------|
| xiii) | Transport of the nuclear fuel material mentioned in sub-paragraph (ii)(c) of the preceding Section, spent fuel, liquids other than nuclear fuel material and other useful materials among materials separated from solutions of spent nuclear fuel, or the vitrifying material of the liquids, incidental to reactor operation, fabricating, reprocessing, use of nuclear fuel material, and waste management [excluding transport stipulated in items (i) to (viii), and (x) of the table]. | Yen 6 billion |
| xiv)  | Waste disposal of nuclear fuel material, etc. incidental to reactor operation, fabricating, reprocessing, use of nuclear fuel material, underground waste disposal, and waste management (excluding waste disposal stipulated in items (i) to (xi) of the table, and including transport of nuclear fuel material, etc. for the waste disposal concerned).   | Yen 1 billion |

Section 3 (Omitted)

Supplementary Provisions (Omitted)

**THE LAW ON INDEMNITY AGREEMENTS FOR COMPENSATION OF NUCLEAR DAMAGE\***  
(Law No. 148 of 17th June 1961, as last amended on 27th May 1988)

(Definitions)

Section 1

As used in this Law, "reactor operation, etc." means reactor operation, etc. as provided in Section 2, paragraph 1 of the Law on Compensation for Nuclear Damage (Law No. 147, 1961, hereinafter referred to as "the Compensation Law"), "nuclear damage" means nuclear damage as provided in Section 2, paragraph 2 of the Compensation Law, "nuclear operator" means nuclear operator as provided in Section 2, paragraph 3 of the Compensation Law [except the nuclear operator as provided in Section 2, paragraph 3, sub-paragraph (i)2], "nuclear ship" means nuclear ship as provided in Section 2, paragraph 4 of the Compensation Law, "financial security" means financial security as provided in Section 6 of the Compensation Law, "financial security amount" means the financial security amount as provided in Section 7, paragraph 1 of the Compensation Law, and "liability insurance contract" means liability insurance contract as provided in Section 8 of the Compensation Law.

(Indemnity agreements for compensation of nuclear damage)

Section 2

The Government may conclude an agreement with a nuclear operator under which the Government undertakes to indemnify the nuclear operator for his loss arising from compensating the nuclear damage not covered by a liability insurance contract and other means for compensating nuclear damage in case the nuclear operator becomes liable, and under which the nuclear operator undertakes to pay an indemnity fee to the Government.

(Indemnified loss)

Section 3

The loss which the Government indemnifies under the agreement as provided in the preceding Section (hereinafter referred to as "indemnity agreement") shall be the loss suffered by the nuclear operator as a result of compensating the nuclear damage mentioned in the following cases:

- i) nuclear damage caused by an earthquake or eruption;
- ii) nuclear damage caused by normal operation (which means reactor operation, etc. performed under the conditions provided by the Cabinet Order\*\*);

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\* Unofficial translation by the Secretariat

\*\* Cabinet Order No. 45 of 6th March 1962 is referred to throughout the Law.  
Note by the Secretariat.

- iii) nuclear damage which can be covered by a liability insurance contract, but for which the persons suffering therefrom have not claimed compensation within a period of ten years from the day of the occurrence of the event (with regard to the nuclear damage appearing in such period, this shall apply only to the case where there is a justifiable reason for their failure to claim compensation within such period);
- iv) nuclear damage which occurs due to the visit of a nuclear ship in foreign waters, but which cannot be covered by the financial security or other arrangements for compensation of nuclear damage as provided in Section 7, paragraph 1 of the Compensation Law (limited to the financial security approved as a part of the financial security provided for in Section 7-2, paragraph 1 of the Compensation Law);
- v) nuclear damage as provided in the Cabinet Order other than that mentioned in the preceding sub-paragraphs.

(Indemnity agreement amount)  
Section 4

The contracted amount concerning an indemnity agreement for the nuclear damage mentioned in the preceding Section sub-paragraphs (i) to (iii) and (v) (hereinafter referred to as "indemnity agreement amount") shall be the amount equivalent to the amount of the financial security as provided in Section 7, paragraph 1 of the Compensation Law (in case the financial security includes an arrangement other than the conclusion of a liability insurance contract and an indemnity agreement, this amount shall be reduced by the amount available for compensation of nuclear damage by means of such other arrangement; in case an indemnity agreement other than the indemnity agreement concerned has been concluded, this amount shall be reduced by the amount available for compensation of nuclear damage by means of such other indemnity agreement).

2. The indemnity agreement amount for the nuclear damage mentioned in the preceding Section sub-paragraph (iv) shall be the amount equivalent to the amount of the financial security as provided in Section 7-2, paragraph 1 of the Compensation Law (in case the financial security and other arrangements for compensation of nuclear damage as provided in Section 7, paragraph 1 of the Compensation Law are approved as a part of the financial security provided for in Section 7-2, paragraph 1 of the Compensation Law, this amount shall be reduced by the amount available for compensation for nuclear damage by means of such other financial security).

(Period of indemnity agreement)  
Section 5

The period of the indemnity agreement concerning the nuclear damage mentioned in Section 3, sub-paragraphs (i) to (iii) and (v) shall run from the time of its conclusion to the time when the reactor operation, etc. has ceased.

2. The period of the indemnity agreement concerning the nuclear damage mentioned in Section 3, sub-paragraph (iv) shall run from the time when the nuclear ship leaves the Japanese water basin to the time when the nuclear ship arrives in the Japanese water basin.

(Indemnity fee)  
Section 6

The annual amount of the indemnity fee shall be equivalent to the amount computed by multiplying the indemnity agreement amount by the rate as provided in the Cabinet Order, taking into account the probability of the occurrence of damage covered by the indemnity agreement and the expenditures of the Government for dealing with the indemnity agreement and other conditions concerned.

(Payment under the indemnity agreement)  
Section 7

The Government shall, according to an indemnity agreement, indemnify up to the indemnity agreement amount for the loss suffered by the nuclear operator as a result of compensating the nuclear damage caused by the reactor operation, etc. performed during the period of the indemnity agreement concerned.

2. In case the Government indemnifies the loss suffered by the nuclear operator as a result of compensating the nuclear damage mentioned in Section 3, sub-paragraphs (i) to (iii) and (v), if there is any amount to be covered by the liability insurance contract, the total sum paid from the indemnity agreement shall not exceed the amount computed by deducting the amount paid from the liability insurance contract from the financial security amount (or the amount computed by deducting the amount paid from the liability insurance contract from the financial security amount further reduced by the amount available for compensation of nuclear damage by means of other arrangements, which the financial security concerned includes, excepting the liability insurance contract and the indemnity agreement).

(Financial limit of indemnity agreements)  
Section 8

The Government shall conclude indemnity agreements to the extent that the total sum of the indemnity agreement amount does not exceed the amount approved by the National Diet in each fiscal year.

(Duty to notify)  
Section 9

When concluding an indemnity agreement, a nuclear operator shall, pursuant to the provisions of the Cabinet Order, notify the Government of important facts regarding reactor operation, etc. The same shall apply where there is a change in the notified facts.

(Specifications by Cabinet Order)  
Section 10

The conclusion of an indemnity agreement, and the date of payment of the indemnity fee, the date of payment under the indemnity agreement and other necessary matters regarding the payment of the indemnity fee and payment under the indemnity agreement shall be provided by Cabinet Order.

(Prescription)  
Section 11

The right to receive payment from an indemnity agreement shall be extinguished two years after the nuclear operator has paid compensation.

(Subrogation, etc.)  
Section 12

Where the Government has indemnified according to an indemnity agreement, if the nuclear operator who is a party to the indemnity agreement has a right of recourse against a third party, the Government shall take over that right up to an amount not exceeding the amount indemnified. If a nuclear operator has received payment by exercising his right of recourse, the Government shall be exonerated from its obligation to indemnify the amount not exceeding the amount of the payment.

(Reimbursement of the sum paid under an indemnity agreement)  
Section 13

Where the Government has indemnified the loss suffered by the nuclear operator as a result of compensating the nuclear damage mentioned in the following sub-paragraphs, the Government shall require the nuclear operator to reimburse pursuant to the provisions of the Cabinet Order:

- i) nuclear damage arising from a fact which the nuclear operator who is a party to the indemnity agreement has failed to notify pursuant to Section 9, or which he has notified falsely;
- ii) nuclear damage caused by the reactor operation, etc. performed during the period from the day when the nuclear operator has received from the Government notice of cancellation of the indemnity agreement pursuant to Section 15, to the day prior to the day when the cancellation comes into force.

(Cancellation of an indemnity agreement)  
Section 14

Where the nuclear operator who is a party to the indemnity agreement has provided financial security other than that which includes the conclusion of the indemnity agreement concerned, the Government may accept an offer for the cancellation of the indemnity agreement, or may cancel it.



2. Cancellation of the indemnity agreement as provided in the preceding paragraph shall take effect immediately.

#### Section 15

The Government may cancel the indemnity agreement where the nuclear operator who is a party to the indemnity agreement has committed one of the following offences:

- i) violated the provisions of Section 6 of the Compensation Law;
- ii) failed to pay the indemnity fee;
- iii) failed to notify pursuant to Section 9 or notified falsely;
- iv) failed to take the measures pursuant to Section 21-2, Section 35, Section 48, Section 51-16, Section 57, paragraph 1 or 2, Section 58, paragraph 1 or 2, Section 59, or Section 59-2, paragraph 1 of the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Law No. 166, 1957);
- v) violated the provisions of the indemnity agreement laid down in accordance with the Cabinet Order.

2. Cancellation of an indemnity agreement pursuant to the preceding paragraph shall take effect upon a lapse of ninety days from the day when the nuclear operator, who is a party to the indemnity agreement, has received a notice of the cancellation.

(Fines)

#### Section 16

Where the nuclear operator, who is a party to the indemnity agreement, violates a provision of the indemnity agreement laid down in accordance with the Cabinet Order, the Government may impose a fine pursuant to the Cabinet Order.

(Management of affairs)

#### Section 17

The affairs of the Government as provided in this Law shall be taken in charge by the Director-General of the Science and Technology Agency.

2. The Director-General of the Science and Technology Agency shall, on the occasion of the cancellation of an indemnity agreement as provided in Section 15, ask the prior opinion of the Minister of International Trade and Industry in cases related to reactors for electrical power generation (which means the reactors as provided in Section 3, paragraph 4 of the Atomic Energy

Basic Law (Law No. 186, 1955) or the prior opinion of the Minister of Transport in cases related to reactors installed in vessels.

Supplementary Provisions (Omitted)