NUCLEAR LAW Bulletin

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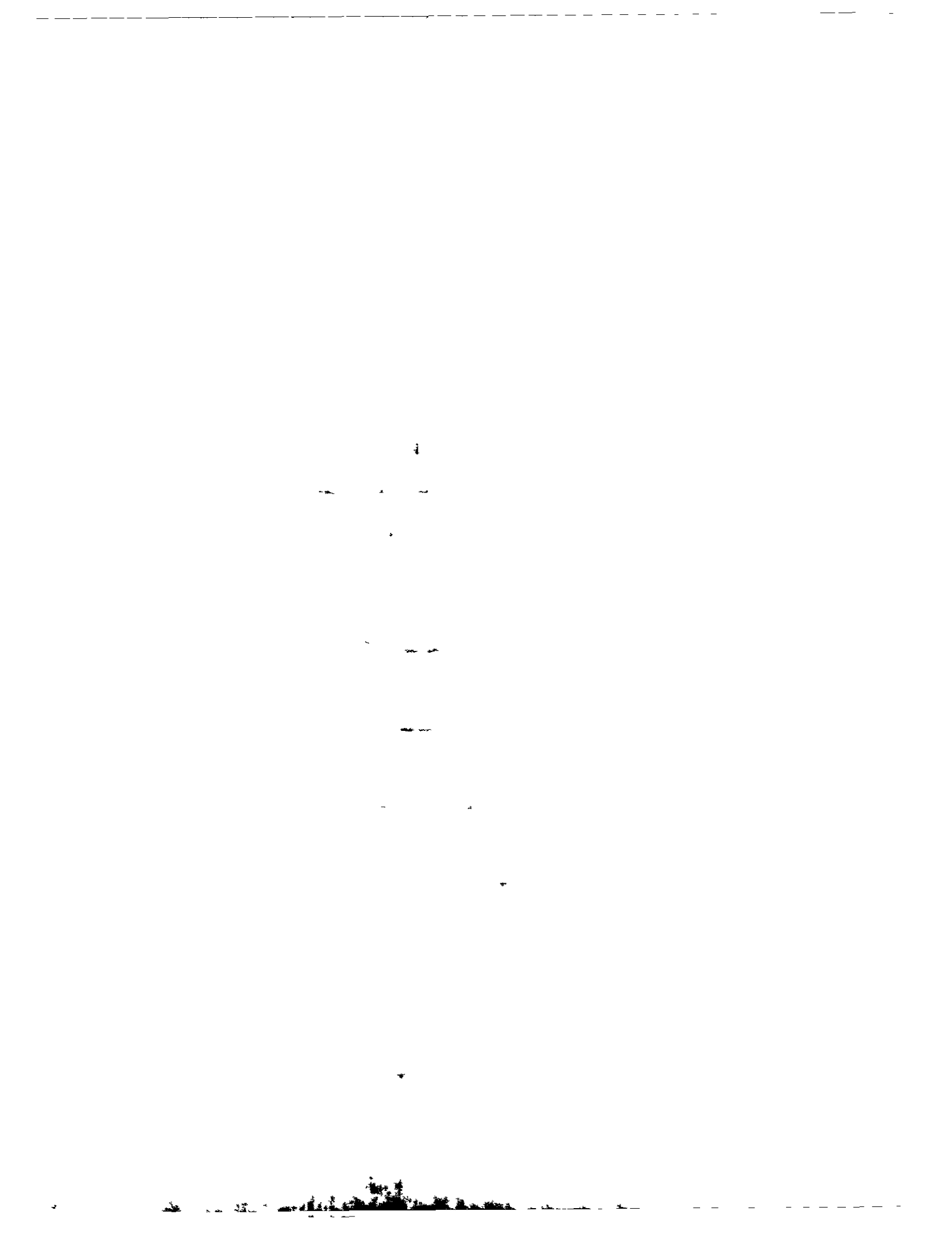
Contents

Nuclear Energy Agency

Organisation for Economic Co-operation and Development



FOREWORD

Readers of the Nuclear Law Bulletin will find a new "Bibliography" Chapter in this issue.

This survey, which does not claim to be comprehensive, aims to inform the reader about various publications on the legal aspects of nuclear activities issued in the past months and of which the Secretariat has had knowledge.

The notes in this Chapter give information on the contents of the publications but provide no comment. Each time the number of publications to be noted justifies it, the Bulletin will include a "Bibliography" Chapter.

LIST OF CORRESPONDENTS TO THE NUCLEAR LAW BULLETIN

ARGENTINA	- Mr. MARTINEZ FAVINI, Head of Legal Department, National Atomic Energy Commission
AUSTRALIA	- Mr. IKENBERG, International Relations and Technical Policy Division, Australian Atomic Energy Commission
AUSTRIA	- Dr. STEINWENDER, Director at the Federal Chancellery
BELGIUM	- Miss HARDENNE, Attaché to the Cabinet of the Minister of Economic Affairs
	- Mr. STALLAERT, Social Security Administration, Ministry of Employment and Labour
	- The Secretary General of the Prime Minister's Cabinet for Programmation of Scientific Policy
BRAZIL	- Mr. AYRTON SA PINTO DE PAIVA, Legal Adviser, Comissao Nacional de Energia Nuclear
CANADA	- Mr. MacISAAC, Legal Adviser, Atomic Energy Control Board
DENMARK	- Mr. ARILDSEN, Head of Section, Ministry of Justice
	- Mr. ØHLENSCHLAEGER, Chief of Division, National Health Service
FINLAND	- Mr. SUONTAUSTA, President of the Atomic Liability Committee
FRANCE	- Mr. VERGNE, Head of Legal Affairs, Atomic Energy Commission
GERMANY	- The Institute of Public International Law of Gottingen University, Department of Nuclear Law (Dr. PELZER)
GHANA	- Mr. LEBRECHT HESSE, State Attorney, Ministry of Justice
GREECE	- External Relations Office, Greek Atomic Energy Commission
INDONESIA	- Mrs. SOEPRAPTO, Head of Legal Division, National Atomic Energy Agency
IRELAND	- Mr. SWEETMAN, Barrister-at-law; and Department of Transport and Power
ISRAEL	- Dr. MEIR ROSENNE, Legal Adviser of the Ministry of Foreign Affairs

ITALY	- Mr. MARCHETTI, Head of Legislative Office, Ministry of Industry, Commerce and Crafts
	- Dr NOCERA, National Committee for Nuclear Energy, Health Protection and Control Division
JAPAN	- Mr. SHIMOYAMA, Deputy Manager of Financial and Purchasing Department, Japan Atomic Power Company
KOREA	- Mr. SHIYOHL PARK, Chief of Nuclear Reactor Division, Atomic Energy Bureau, Ministry of Science and Technology
MEXICO	- Mr. ORTIZ-MONASTERIO, Legal Adviser, National Nuclear Energy Commission
NETHERLANDS	- Mr. BOSSCHER, Head of the Desk Atomic Affairs, Ministry of Foreign Affairs
NEW ZEALAND	- Mr. O'LEARY, Executive Secretary of the Atomic Energy Committee
NORWAY	- Mr. SKARPNES, Head of Division, Department of Legislation, Ministry of Justice
PHILIPPINES	- Mr. CRISTOBAL, Chief, Legal Division, Atomic Energy Commission
PORTUGAL	- Mr. COUTINHO, Adviser to the Junta de Energia Nuclear
SPAIN	- Mr. DE LOS SANTOS LASURTEGUI, Legal Adviser, Junta de Energia Nuclear
SWEDEN	- Mr. JACOBSSON, Legal Adviser, Ministry of Justice
SWITZERLAND	- Mr. PFISTER, Deputy, Office of Energy Economy, Federal Department for Transport, Communications and Energy
TURKEY	- Secretariat of the Turkish Commission for Nuclear Energy
UNITED KINGDOM	- Mr. COLEMAN, Assistant Treasury Solicitor, Treasury Solicitor's Department, Department of Trade and Industry
	- Mr. RITCHIE, Deputy Legal Adviser of the Atomic Energy Authority of the United Kingdom
UNITED STATES	- Mr. BRUSH, Office of the General Counsel, United States Atomic Energy Commission
ZAIRE	- Mr. MALU WA KALENGA, Commissioner for Nuclear Science
ZAMBIA	- Mr. ZULU, Solicitor General, Ministry of Legal Affairs
IAEA	- Legal Division, International Atomic Energy Agency
EURATOM	- Legal Division, Commission of the European Communities
WHO	- Mr. DE MOERLOOSE, Head of the Health Legislation Unit, World Health Organization

LEGISLATIVE AND REGULATORY ACTIVITIES

• *Brazil*

THIRD PARTY LIABILITY

Bill on third party liability for nuclear damage

The Brazilian Government's decision to have the first Brazilian nuclear power station constructed by the partly State-owned "Electrobras" Company Ltd. has led to the preparation of appropriate legislation on nuclear third party liability.

Consequently, a Bill has just been drafted within the Ministry of Mines and Energy which will shortly be submitted for consideration by the National Congress, to be voted and enter into force in time for the start-up of plant operation.

This Bill is closely patterned on the principles contained in the Vienna Convention. It therefore provides for the absolute, sole and limited liability of the nuclear operator for nuclear damage. Such liability is limited to ten or twenty years according to the case and is waived in respect of armed conflict, civil war, natural disasters of a catastrophic nature etc.

These cases of exoneration from liability however, do not apply to workers in a nuclear installation, whose rights are governed by labour laws. Also, the Bill limits the liability of the operator to $ 50 million, a much higher amount than the minimum amount set by the Vienna Convention. The Federal Judge is declared solely competent to hear proceedings brought following a nuclear incident.

This regime for compensation of victims provides that physical injury must be compensated before damage to property.

The operator must cover his liability by means of insurance or financial security; it is provided, however, that the Government will compensate for damage of a catastrophic nature.

Voting of this Act should be accompanied by Brazilian ratification of the Vienna Convention; this ratification of the Vienna Convention will probably be the fifth, thus bringing it into force.

• *France*

REGIME OF NUCLEAR INSTALLATIONS

Decree No 73-405 of 27th March 1973 (Official Gazette of the French Republic of 4th April 1973)

The system of authorisation of large nuclear installations in France was laid down by a Decree dated 11th December 1963. This Decree was substantially amended and partly supplemented (Section 15) by a new Decree made on 27th March 1973.

It is recalled that the 1963 Decree as amended concerns the licensing procedure for large nuclear installations which are listed therein. This licensing procedure, which is co-ordinated by the Minister for Industrial and Scientific Development includes, barring derogations, a local enquiry followed by authorisation to construct The application is submitted for advice to an Interministerial Commission for large nuclear installations. The Commission also gives its advice on the definition of the special conditions required for the delivery of a licence to operate each nuclear installation.

The provisions of the Decree, as amended, are reproduced in the "Texts" Chapter of this issue.

• *Germany*

TRANSPORT OF RADIOACTIVE MATERIALS

Ordinance of 10th May 1973 on the Transport of Dangerous Goods by Road

The Federal Minister for Traffic has issued an Ordinance on the Transport of Dangerous Goods by Road, which entered into force on 1st July 1973. The Ordinance, which replaces the Ordinance on Protection against Damage caused by Transport of Dangerous Goods by Road of 23rd July 1970, lays down that certain categories of dangerous goods, including radioactive substances, may only be transported in conformity with the prescriptions of Annex A of the Ordinance. These prescriptions are based in particular on the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

This Ordinance does not affect the provisions of the Atomic Energy Act and the First Radiation Protection Ordinance.

• *Italy*

RADIATION PROTECTION

Decree of the President of the Republic of 12th December 1972 fixing the conditions for inclusion in the list of approved experts and authorised doctors in charge of the surveillance of radiation protection from the viewpoint of physics and medicine

This Decree published on 3rd May 1973 determines a number of general standards for the inclusion of approved experts and doctors These rules include among others

- a minimum age of 21 years;
- possession of the required university degree,
- a medical certificate confirming the physical fitness of applicant for medical surveillance.

To qualify for inclusion in the list of approved experts the candidate must be in possession of a degree in a certain number of subjects set out in the Decree, such as physics, chemistry, mathematics or medicine or surgery with a specialisation in radiology. In addition, he should have adequate knowledge of dosimetry and of the harmful effects of ionizing radiation. The Decree sets up within the Ministry of Labour and Social Welfare a Committee to examine the qualifications of the persons wishing to be included in the list of approved experts and to take the appropriate decision in each case. The members of this Committee and its Secretary have to be experts in the field of surveillance of radiation protection and their appointment must be approved by the Minister of Labour and Social Welfare.

The Decree also provides a list of authorised doctors in charge of the surveillance of ionizing radiations. To qualify for inclusion, a doctor must have a degree in medicine and surgery with at least three years' practical experience, and a diploma in industrial medicine or in medical radiology. A Committee within the Ministry of Labour and Social Welfare similar to the one for qualified experts decides upon the qualification of the applicants.

Experts and doctors are approved for inclusion in the list for a period of five years which is renewable.

REGIME OF RADIOACTIVE MATERIALS

Decree of 7th March 1973 amending the Decree of 15th December 1970 concerning exemptions from notifications and authorisations

This Decree made by the Minister for Industry, Commerce and Crafts and published in the Official Gazette of 18th April 1973, modifies Section 1(1) of the Decree of 15th December 1970 concerning exemptions from the obligation to notify and from authorisations as laid down by Act No. 1860 of 31st December 1962, in implementation of Act No. 1008 of

19th December 1969. The text of the 1970 Decree was published in Nuclear Law Bulletin No. 8. The amendment made by the Decree of 7th March 1973 excludes from the authorisation regime, in addition to substances containing a certain amount of natural or depleted uranium, substances containing thorium within the same quantitative limits as those applicable to uranium.

FOOD IRRADIATION

Ministerial Decree of 30th August 1973 authorising the preservation of potatoes, onions and garlic by means of gamma radiation treatment

This Decree made by the Health Minister and published in Official Gazette No.254 of 1st October 1973 authorises the possession of and trade in potatoes, onions and garlic which have been exposed to gamma radiation. The irradiated food may only be sold under appropriate packaging which indicates clearly that such food has been irradiated.

The Decree has been published under Act No. 283 of 30th April 1963 (Section 7) which empowers the Health Minister to authorise the possession of and trade in foodstuffs and beverages having undergone special treatment.

• *Japan*

THIRD PARTY LIABILITY

Amendment of Cabinet Order No. 44 on financial security

On 6th September 1971, Cabinet Order No. 44 of 13th March 1962 relating to the amount of financial security required by an operator for certain categories of nuclear installations was amended to take account of the Compensation Law (Act No. 147).

The following are the amounts of financial security required of an operator under the revised Cabinet Order

- a reactor whose thermal output exceeds 10,000 kW Yen 6 billion,
- a reactor whose thermal output is between 100 kW and 10,00kW Yen 1 billion,
- a reactor whose thermal output is less than 100 kW Yen 100 million,
- a plant for the fabrication of nuclear fuel Yen 100 million,
- a plant for the reprocessing of nuclear fuel Yen 6 billion;

- a plant utilising nuclear fuel Yen 100 million;

- transportation of nuclear fuel or material contaminated by nuclear fuel, material incidental to the operation of a reactor, or for purposes of fabricating, reprocessing or utilising nuclear fuel Yen 100 million;

- transportation of spent fuel incidental to the operation of the reactor or to reprocessing operations Yen 1 billion

The amounts given in the Study on Japanese nuclear third party liability legislation published in the Chapter "Miscellaneous" in Nuclear Law Bulletin No. 11 should therefore be amended accordingly

• *New Zealand*

RADIATION PROTECTION

Act No. 100 of 8th December 1971

The Health Act 1956 was amended by Act No. 100 of 8th December 1971 and published in the Statutes of New Zealand 1971, Volume 3, 1972 The amendment authorises the Minister for Health to make regulations concerning the use of and trade in devices and equipment emitting ionizing radiations other than X-rays or gamma rays.

Regulations No. 48 of 5th March 1973 on protection against ionizing radiation

These Regulations were made in implementation of the Radiation Protection Act 1965. The Regulations which came into force on 1st April 1973 by Decision of the Governor-General, submit the possession, production and use of radioactive materials as well as the use of radiation-emitting equipment to prior authorisation. However, these Regulations provide for a certain number of derogations from this regime (Schedule I). They specify the obligations of holders of radioactive materials or radiation-emitting equipment, as well as those of licence holders in the radiation protection field, especially regarding the organisation of the monitoring service, storage of materials, waste management and record keeping (Schedule II). The Regulations also determine the rules to be observed for the fitting up of workplaces and the measures to be taken in case of excessive irradiation (Schedule III). Finally, they lay down provisions concerning equipment for radiotherapy and diagnosis (Schedule IV). The Schedules to the Regulations give the maximum permissible doses and dose limits based on the recommendations of the International Commission on Radiological Protection, as well as the activities and concentrations of radioactive materials.

The entry into force of the present Regulations annuls the 1951 Regulation on radiation protection.

TRANSPORT OF RADIOACTIVE MATERIALS

Regulations of 5th March 1973 on the transport of radioactive materials

These Regulations were also made under the Radiation Protection Act 1965. The import, export and transport of radioactive materials in New Zealand are governed by these Regulations. The safety requirements laid down therein accord with those set out in the IAEA 1967 edition of the Regulations for the safe transport of radioactive materials, and for air transport, these requirements follow the International Air Transport Association (IATA) rules.

Publication of these Regulations annuls the 1951 Regulation on the transport of radioactive materials.

• *Norway*

NUCLEAR LEGISLATION

Amendment to the Atomic Energy Act of 12th May 1972

The Atomic Energy Act which came into force on 1st July 1973 to enable Norway to ratify the Paris Convention and the Brussels Supplementary Convention, was amended twice by Act No. 26 of 25th May 1973 (Section 24, Subsection 3) of the Atomic Energy Act and by Act No. 37 of 8th June 1973 (Section 27).

Amending Act No. 37 was made to enable Norway to ratify the Brussels Convention of 17th December 1971 relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material. The texts of both amendments to the Atomic Energy Act are reproduced below*.

Section 24 (Absolute liability, etc.)

Subsection 3

Compensation for non-financial damage shall be payable only if the operator of the installation is liable for the damage by virtue of Chapter 3 in Act No. 26 of 13th June 1969 concerning indemnity.

Section 27 (Claims against persons other than the operator)

Subsection 1 no change.

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* The text of the Atomic Energy Act has been published in the Supplement to Nuclear Law Bulletin No. 11.

Subsection 2

If nuclear damage is caused by a nuclear incident during the maritime carriage of nuclear substances, the provisions in Subsection 1 shall apply correspondingly, provided that the operator is liable for such damage under the Vienna Convention or under a foreign act of legislation concerning liability for nuclear damage, and provided that such legislation is, in all respects, as favourable to the injured party as are the provisions laid down in the Paris or Vienna Conventions.

Subsection 3:

Claims for compensation for nuclear damage for which the operator is not liable under Section 24, Subsection 2 or Section 25 or corresponding provisions under another legislation or Convention as mentioned above in Subsections 1 or 2, may only be enforced against an individual person who has himself wilfully caused the damage. In cases of damage to a means of transport, as mentioned in the second sentence of Subsection 2 in Section 25, the operator shall furthermore - irrespective of provisions concerning liability exemptions under the legislation of the Installation State - be liable in accordance with the general rules of the law of torts, unless otherwise agreed.

Subsection 4

The provisions of this Section are not applicable in so far as they conflict with any international Convention in the field of transport to which Norway is a party.

Subsection 5

The provisions of Sections 39 - 44 shall apply as regards cover out of Government Funds.

• *Portugal*

REGIME OF NUCLEAR INSTALLATIONS

1972 Decree on the regime for licensing of nuclear installations

Decree-Law No. 49-398 of 24th November 1969 on the authorisation of industrial nuclear activities was supplemented by implementing Decree No. 487 made on 5th December 1972 and published in Official Gazette No. 282 first series, dated 5th December 1972. This new Decree which has already been mentioned in the Nuclear Law Bulletin (see Nuclear Law Bulletin Nos. 6 and 9) lays down the detailed provisions for the licensing of large nuclear installations for the generation of electrical energy. This procedure, which is carried out jointly by the Electricity Services Directorate General and the Junta de Energia Nuclear concerns the preliminary licence, then the construction licence and finally the operating licence. The provisions of this Decree are reproduced in the "Texts" Chapter of this issue of the Bulletin.

• *Sweden*

THIRD PARTY LIABILITY

Amendment of Nuclear Liability Act

The Swedish Government is actively preparing to ratify the 1971 Brussels Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material. At the same time, it is preparing a Bill including the amendments to be made for this purpose to the Nuclear Liability Act of 8th March 1968.

• *United States*

NUCLEAR LEGISLATION

New USAEC Regulations

Over the past few months, the Commission promulgated three Regulations which may be of general interest. The first was an amendment to the Commission's regulations at 10 CFR, Part 110, which broadened the general authorisation granted to U.S. persons to engage directly or indirectly in the production of special nuclear material outside the United States.

The second was the adoption of Appendices G and H to 10 CFR, Part 50, entitled, respectively, "Fracture Toughness Requirements" and "Reactor Vessel Material Surveillance Program Requirements". These are intended to implement General Design Criterion 31, "Fracture Prevention of Reactor Coolant Pressure Boundary", of 10 CFR, Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants".

Third, on May 9, 1973, the Commission announced revisions in its criteria for the provision of uranium enrichment services. The criteria, established pursuant to Section 161.v. of the Atomic Energy Act, establish the general terms and conditions under which the AEC agrees to enter into uranium enrichment services contracts with domestic and foreign customers.

CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

• *Canada*

CONSTITUTIONAL VALIDITY OF THE ATOMIC ENERGY CONTROL ACT

On 18th December 1972 the Ontario High Court took its decision in a case Denison Mines Ltd. v. Attorney-General of Canada, which concerned the validity of the Canadian Atomic Energy Control Act. The action brought before the Court consisted in a claim for a declaration that the Atomic Energy Control Act was beyond the powers of the Parliament of Canada. The Court dismissed the action mainly on formal grounds, in considering that the action was a matter directly affecting the Crown and its right to control atomic energy and that, since Section 17(1) of the Federal Court Act provides that the Trial Division of the Federal Court has exclusive jurisdiction in such a case, the jurisdiction of the Ontario High Court was waived. At the same time the Court held that even if its jurisdiction were not waived, the Atomic Energy Control Act was valid legislation for the peace, order and good government of Canada as being a matter which, from its inherent nature, is of concern to the nation as a whole. In addition it was considered that the participation by Canada in the international control of the civilian uses of atomic energy required that the Parliament of Canada have internal domestic control and regulation over its production.

• *Spain*

LICENSING OF NUCLEAR INSTALLATIONS

On 19th January 1973, the Fourth Section for Administrative Appeals of the Supreme Court delivered a Judgment which constituted the first judicial decision made at that level in Spain in the nuclear field.

The administrative Decision challenged had been made on 11th November 1966 (Official Gazette of 5th December 1966) by the General Directorate for Energy, which authorised the "S.A. Hidroelectrica Española " to erect a nuclear power station ranging from 300 to 500 MWe on the site of Irta at Plà de Pebret (Castellón de la Plana), after compliance with the appropriate administrative formalities.

The validity of this Decision was contested by the Municipality of Peniscola, in respect of the boundaries of the site chosen for the power station, as well as by certain bodies responsible for town planning on the plea that this site was within a protected area preserved for touristic development.

The Supreme Court ruled on these appeals, declaring in its Judgment that these administrative Decisions concerning the fixing of the location were null and void in part as they were contrary to law.

This case stressed firstly the conflicting interests likely to arise today between the promotion of tourism and the need to ensure the generation of nuclear electricity. In fact the site decided for the power station was within a protected town-planning area in accordance with Peniscola's town-planning scheme which excluded all commercial and industrial applications. This scheme had been adopted by the Commission for the Provinces on 1st August 1960, and the delivery of a licence on a subsequent date therefore represented a specific derogation from such a scheme and was contrary to Spanish land use legislation.

The Supreme Court therefore considered that the Administration could neither ignore nor, even exceptionally, derogate from a town-planning scheme which had been properly adopted.

This case, however, raises the following question to what extent is it possible to rely on the judgment of municipal authorities for fixing the location of installations such as nuclear power stations which pose complex problems in this field ? These concern, in particular, safety as well as technical and economic factors - such a solution would lead to conflicts of competence between the Minister for Industry and local authorities.

It should also be noted that the Judgment concerned is based on rules and regulations in force at the time the disputable administrative Decisions were made, that is to say the 1964 Outline Act on nuclear energy and legislation applicable to industry in general. Consequently, in its Judgment, the Supreme Court did not take into account the provisions of the 1972 Regulations on nuclear and radioactive installations, which specify in fact that prior authorisation signifies official recog-

nition of the purpose of the installation as well as of its location, the local Administration cannot oppose this in any way, and under these Regulations it must obtain on its part the views of the municipal authorities involved.

It is assumed from the above that this Judgment is not intended to serve as a precedent as it was not based on the special regulations now in force in Spain in this particular field and which seem to settle the conflict of interests and competencies at the origin of the present case.

• *United States*

LICENSING OF NUCLEAR INSTALLATIONS

The case, "Ralph Nader v. Dixie Lee Ray" (Chairman of the USAEC), raised for the consideration of the US District Court, District of Columbia, the question of whether the AEC had the obligation to revoke the operating licenses of 20 named nuclear power reactors.

The plaintiffs, Ralph Nader and Friends of the Earth, alleged that the AEC, in view of Article 186(a) of the Atomic Energy Act and also of its own Regulations, was under the non-discretionary legal duty to revoke the above-mentioned licences. The issue raised by the plaintiffs concerned the emergency core cooling system (ECCS) of each of the named reactors. The ECCS is an engineered safety system whose function is to prevent the core of the reactor from attaining excessively high temperatures and experiencing loss of integrity in the event of a particular kind of hypothesized reactor accident, called a loss-of-coolant accident. The AEC Regulations require every light-water-cooled nuclear power reactor to contain an ECCS which must provide abundant emergency cooling. In order for the ECCS of such a reactor to be found acceptable by the AEC, it must be shown by complex computer calculations that the ECCS complies with certain criteria imposed by the AEC. These criteria are embodied in the AEC Regulations and are generally referred to as the Interim Acceptance Criteria.

The plaintiffs' complaint alleged (a) that the AEC's scientific advisers in ECCS matters are in virtually unanimous agreement that compliance by a reactor's ECCS with the Interim Acceptance Criteria was not sufficient to ensure the effectiveness of the ECCS, (b) that the AEC nevertheless had licensed and continued to permit the operation of the nuclear plants in question; (c) that the continued operation of these nuclear plants represented action beyond the AEC's statutory authority; and (d) that consequently the AEC was under a non-discretionary legal duty to revoke the licences of those plants.

Nineteen electric utility companies, which owned the nuclear plants filed motions to intervene and were admitted by the Court as co-defendants.

The Court gave its decision on 13th July 1973. In its decision the Court considered first of all that as highly complex matters of nuclear reactor technology were involved, the case should be resolved in the first instance by the AEC as the agency with expertise in those matters. Also, the plaintiffs had failed to invoke or exhaust any of the administrative or other remedies available to them, as neither plaintiff Nader nor plaintiffs Friends of the Earth had requested to be admitted as a participant in the ECCS Rulemaking or sought judicial review of the AEC's promulgation of the Interim Acceptance Criteria.

Apart from this the Court held that it could not assume jurisdiction, even if the plaintiffs had exhausted the available administrative remedies, as jurisdiction over the AEC's discretionary actions was exclusively vested in the US Courts of Appeals.

Moreover, the standard applied in issuing operating licences for nuclear power reactors is whether the AEC can find that there will be adequate protection to the health and safety of the public. Absolute certainty is not required by the Atomic Energy Act, nor does nuclear safety technology admit of such a standard. On the basis of the information submitted to it, the Court concluded that the AEC had fully met its statutory responsibilities with respect to ECCS safety matters and that, in consequence, there had been no violation of a non-discretionary, legal duty by the AEC.

Finally the Court considered that the plaintiffs had not presented any evidence that they would suffer injury from the denial of their request. Granting of the request by the plaintiffs would rather cause substantial injury to the consumers of electricity in several parts of the nation and to the intervenors.

On the basis of the foregoing conclusions the action of the plaintiffs was denied.

ADMINISTRATIVE DECISIONS

• *Indonesia*

ORGANISATION AND STRUCTURE

In Indonesia, the creation of a Ministry of State for Research has had an effect on nuclear activities. This Ministry is responsible for co-ordinating all national theoretical and applied research programmes including those in the nuclear field.

The National Atomic Energy Agency remains statutably under the supervision of the President, but from now onwards its research programmes will be placed under the authority of the Ministry for Research.

• *Sweden*

ORGANISATION AND STRUCTURE

A Governmental Committee to consider the problems caused by high-level wastes produced by nuclear power plants was set up by the Swedish Governmental Authorities on 28th December 1972. The members of the Committee as well as its advisory experts were appointed by the Minister for Industry on 25th April 1973.

The Committee's terms of reference in fact include the study of technical and economic problems and the safety problems raised by the treatment of highly-active wastes as well as the transport and storage of such wastes. In particular, the Committee is to consider whether a research programme on the treatment and storage of such wastes must be initiated in Sweden and must study the conditions for possibly organising the storage of radioactive wastes on national territory. In addition, the Committee is empowered to consider the regulations presently in force in this field and to propose amendments it deems appropriate.

INTERNATIONAL ORGANISATIONS AND AGREEMENTS

INTERNATIONAL ORGANISATIONS

• *Nuclear Energy Agency*

ADHESION OF AUSTRALIA TO NEA

Australia, which had already joined OECD on 7th June 1971, also decided to accede to the Statute of the Nuclear Energy Agency. It is recalled that NEA was established by a Decision of the OEEC Council in 1957. This Decision was subsequently amended twice and is generally referred to as the Statute of the Agency. In accordance with Article 20 of the Statute, members of the Agency are defined as those whose Governments participate in the Decision To give effect to Australia's wish to participate in the Agency, the OECD Council decided on 16th October 1973 that the Statute would apply to Australia as from 1st October 1973.

On its decision to join NEA, Australia became the twentieth Member of the Agency.

INAUGURAL SESSION OF THE EUROPEAN NUCLEAR ENERGY TRIBUNAL

The preceding issue of the Nuclear Law Bulletin had mentioned that the European Nuclear Energy Tribunal was beginning its second term of office on 1st March 1973, in accordance with the OECD Council Decision of 13th February 1973. The Judges of the Tribunal held their inaugural session at OECD Headquarters on 26th November 1973. This session was intended for the election of the President of the Tribunal and the designation of its Registrar, as well for settling certain practical matters to enable cases of litigation between Member countries to be brought before the Tribunal where necessary

The Judges elected Sir John Foster as President and Mr. von Busekist was appointed Registrar of the Tribunal The Judges also considered and approved the provisions of their Rules of Procedure, adopted during the Tribunal's first term of office.

REVISION OF THE PARIS CONVENTION

Article 22(c) of the Paris Convention provides that "a Conference shall be convened by the Secretary-General of OECD in order to consider revisions to this Convention after a period of five years as from the date of its coming into force...".

As five years have passed since the entry into force of the Paris Convention on 1st April 1968, this period came to expiry in Spring 1973, and the Steering Committee therefore invited the NEA Group of Governmental Experts on Third Party Liability in the Field of Nuclear Energy to study a number of questions raised by a possible revision of the text of the Convention and by the organisation of a Revision Conference.

After consideration of the various points, the Group of Experts concluded that the drawbacks of amending the Conference at present outweighed the advantages of such an exercise. At its last meeting in October 1973, the Group of Governmental Experts agreed that a revision of the Paris Convention would not be justified for the time being; it would be advisable on the other hand to review this matter at a later date in the light of the technological and economic evolution of the uses of nuclear energy.

RADIATION PROTECTION STANDARDS FOR GASEOUS TRITIUM LIGHT DEVICES

On 24th July 1973, the Council of the Organisation for Economic Co-operation and Development (OECD) adopted Radiation Protection Standards for Gaseous Tritium Light Devices. The purpose of these standards, which were established by the OECD Nuclear Energy Agency, is to promote a uniform course of action by the Member countries of the Organisation in respect of the manufacture, import, use and final disposal of such devices while ensuring adequate protection of users and the population at large against radiation hazards arising from their use. They are also designed to facilitate international trade The Decision of the Council recommends that the Governments of Member countries should base the measures to be taken to give adequate protection against hazards from such devices on these Radiation Protection Standards.

ARTICLE VI OF THE STATUTE

The amendment to Article VI of the Statute which was approved by the General Conference at its XVIth Regular Session entered into force on 1st June 1973 The amendment, the text of which is reproduced in Nuclear Law Bulletin No 6, provides for an increase of membership on the Board of Governors The following 34 Member States are now represented on the Board

Algeria	Germany, Fed Rep. of	Pakistan
Argentina	Ghana	Peru
Australia	Hungary	Philippines
Brazil	India	Saudi Arabia
Bulgaria	Indonesia	South Africa
Canada	Ireland	Sudan
Chile	Italy	Sweden
Costa Rica	Japan	Switzerland
Czechoslovak Socialist Republic	Korea, Rep of	USSR
Denmark	Lebanon	UK
France	Mexico	USA
Gabon		

XVIIth REGULAR SESSION OF THE GENERAL CONFERENCE

The XVIIth Regular Session of the General Conference was held in Vienna from 18th-24th September 1973. Upon recommendation of the Board, it approved the German Democratic Republic and the Republic of Mongolia for membership in the Agency thus bringing its members to 105 countries. The Conference adopted amendments to its Rules of Procedure to take account of the amendment to Article VI.A.2. of the Statute. It was also decided that a Working Group would assist the Secretariat in preparing a revised set of draft Rules of Procedure which would be considered by the Conference at its next session.

SAFEGUARDS

By 1st November 1973, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) had been ratified or acceded to by 81 States. Honduras, the Ivory Coast and Nicaragua have ratified the Treaty since 1st March 1973, the date of the list published in Nuclear Law Bulletin No. 11 Agreements for the application of Safeguards in connection with the Treaty are now in force with 28 States, 9 other such Agreements have been signed and 4 others approved by the Board.

THE IAEA RESPONSIBILITIES UNDER THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION OF 1972

This subject was considered by a Panel composed of Experts from 18 Member States which met in Vienna from 4th-8th June 1973 The meeting was also attended by observers from 9 Member States and by representatives of 7 international organisations, including the OECD Nuclear Energy Agency. The Panel adopted unanimously a set of draft recommendations, which includes a definition of high-level radioactive wastes or other high-level radioactive matter unsuitable for dumping at sea, and proposals for the environmental and ecological evaluation of dumping applications in accordance with the Convention as well as for the operational control of the dumping of radioactive wastes or other radioactive matter not prohibited by the Convention.

The Panel stressed in a covering note to the draft recommendations that its proposals, which were based on scientific principles developed in the course of extensive work, particularly in marine radioecology, and took into account the various possible effects of dumping wastes at sea, should not be understood as encouraging such dumping without full consideration of the alternatives; and that man depended on both the sea and land and must protect both

The Director General has asked the Board of Governors to communicate their views on the content of the recommendations to him by 1st December 1973.

REGIONAL SEMINAR IN NUCLEAR LAW FOR LATIN AMERICAN COUNTRIES

The Seminar was held in Rio de Janeiro from 25th-29th June 1973 in collaboration with the Brazilian Nuclear Energy Commission It was intended for legal officers of national authorities on atomic energy and nuclear law experts. Seven Latin American countries were represented at the meeting while the invited experts came from six countries outside the region (Canada, Belgium, Federal Republic of Germany, Spain, UK and USA).

AGREEMENTS

• *United States*

AMENDMENT OF THE CO-OPERATION AGREEMENT WITH EURATOM

The Co-operation Agreement on the peaceful uses of nuclear energy concluded between the United States and the European Atomic Energy Community (Euratom) on 8th November 1958 and subsequently amended several times (as well as the Additional Agreement of 11th June 1960) was again amended on 20th September 1972. This amendment came into force on 28th February 1973 and is intended to reflect the changes in the United States Atomic Energy Commission policy on the supply of enriched uranium to the Community.

The amendment to the Co-operation Agreement between the United States and Euratom has led to the amendment, on 14th August 1973, of Section 5 of the Euratom Co-operation Act of 1958. This amendment of Section 5 consists of replacing the words "two hundred fifteen thousand kilograms of contained uranium 235" by the words "an amount of contained uranium 235 which does not exceed that necessary to support the fuel cycle of power reactors located within the Community having a total installed capacity of thirty five thousand megawatts of electric energy, together with twenty five thousand kilograms of contained uranium 235 for other purposes". The aim of this amendment is to increase the amount of contained uranium 235 which may be supplied to Euratom pursuant to Section 54 of the Atomic Energy Act of 1954, as amended, concerning foreign distribution of special nuclear material.

CO-OPERATION AGREEMENT ON PEACEFUL USES OF ATOMIC ENERGY

The United States of America and the Union of Soviet Socialist Republics signed an Agreement on Scientific and Technical Co-operation in the Field of Peaceful Uses of Atomic Energy on 21st June 1973, which came into force on that date and will remain in force for ten years.

Both parties will promote the exchange of information in the nuclear field and mutual visits on the basis of the Memorandum on Co-operation on the Peaceful Uses of Atomic Energy of 28th September 1972 between the US Atomic Energy Commission and the USSR State Committee for the Utilisation of Atomic Energy, and with the conclusion of the present Agreement, the scope of co-operation has been expanded to include the joint R and D on future technology, such as thermonuclear fusion and fast breeder reactors

AGREEMENT ON THE PREVENTION OF NUCLEAR WAR

On 22nd June 1973, the United States and the Soviet Union signed an Agreement on the Prevention of Nuclear War, which came into force on that day and is of unlimited duration

Under the Agreement, the Parties agreed to act in a manner which would prevent the development of situations capable of causing a dangerous exacerbation of their relations, and which would exclude the outbreak of nuclear war between them and between either of the Parties and other countries.

• *Norway*

RATIFICATION OF THE PARIS CONVENTION AND THE BRUSSELS SUPPLEMENTARY CONVENTION

Following the entry into force on 1st July 1973 of the Atomic Energy Act of 12th May 1972, Norway ratified the Paris Convention on 2nd July 1973 and the Brussels Supplementary Convention on 9th July 1973. It is provided that Sections 40 and 41 of the Atomic Energy Act which deal with the provisions of the Brussels Supplementary Convention, will be implemented only when the latter comes into force

The ratification by Norway of the Paris Convention and the Brussels Supplementary Convention now brings the Contracting Parties to both Conventions to 9 and 5 respectively.

• *Portugal*

DECREE No 487 OF 5TH DECEMBER 1972
ON THE PROCEDURE FOR THE LICENSING OF NUCLEAR INSTALLATIONS*

(Published in Official Gazette No. 282, 1st Series, 5th December 1972)

The Government decrees

Section 1

The establishment of nuclear power stations for the production of electricity is governed by the provisions of Decree-Law No. 49-398 of 24th November 1969, as well as by the regulations applicable to power stations and nuclear installations and must be preceded by the delivery of a provisional licence.

Section 2

(1) The request for a provisional licence which must include all the information required for an assessment from the technological and economic points of view as well as from the points of view of the safety of the power station and its siting must be sent to the General Directorate for Electrical Services which will send a copy thereof to the Junta de Energia Nuclear requesting the opinion of the latter.

(2) The General Directorate for Electrical Services and the Junta de Energia Nuclear may contact the applicant directly and agree on the choice of the Ministerial Departments and other bodies to be consulted; the latter must decide, in their own area of competence, within 60 days, a lack of reply signifying their agreement on the application.

(3) The General Directorate for Electrical Services and the Junta de Energia Nuclear will, on receival, exchange copies of the opinions of the bodies consulted in accordance with the provisions of the above paragraph.

(4) The General Directorate for Electrical Services and the Junta de Energia Nuclear decide on the validity of the information referred to in paragraph (1).

* Unofficial translation prepared by the Secretariat.

Section 3

(1) The General Directorate for Electrical Services must publish notifications of the request for a provisional licence in the Official Gazette (Diario do Governo) as well as in three widely distributed daily newspapers, the General Directorate must send to the Municipal Council of the District where it is planned to set up the power station, one copy of these notifications in order that they should be posted within 15 days in a thoroughfare and published in the local newspaper, where there is one.

(2) These notifications must be published in the Official Gazette and in daily newspapers for three consecutive days and they must be kept posted for 15 days.

(3) The General Directorate for Electrical Services must communicate to interested persons the request made by the applicant and the relevant data within a period of 30 days starting from the last day of publication of the notification in the Official Gazette

(4) Objections must be sent directly to the General Directorate for Electrical Services or to the Municipal Council mentioned in the above paragraph, in the latter case, the Municipal Council must transmit them within the eight following days to the General Directorate.

(5) The General Directorate for Electrical Services sends to the Junta de Energia Nuclear one copy of all the objections it has received directly or through the Municipal Council.

Section 4

The General Directorate for Electrical Services is responsible for all the procedure relating to a provisional licence and, in collaboration with the Junta de Energia Nuclear, prepares a report for the Government, accompanied by the opinion of the Commission for Fuels and Nuclear Power Stations.

Section 5

(1) The Government grants the provisional licence for the establishment of a power plant on the site proposed.

(2) The provisional licence remains subject to the compliance of the applicant with the conditions set. This concerns in particular, the time allowed for putting forward the request for a construction licence.

(3) The provisional licence enables the undertaking having made the application to benefit from the facilities provided by Section 7 of Decree-Law No. 49-398.

Section 6

(1) Construction of a nuclear power station is subject to prior authorisation

(2) The request for a construction licence giving all the information required for an assessment, including the preliminary safety report, must be sent to the General Directorate for Electrical Services which sends a copy thereof to the Junta de Energia Nuclear requesting the opinion of the latter

(3) The General Directorate for Electrical Services and the Junta de Energia Nuclear may contact the applicant directly and agree on the choice of the bodies to be consulted, the latter must decide, in their own area of competence, within 60 days, a lack of reply signifying their agreement on the application.

(4) The General Directorate for Electrical Services and the Junta de Energia Nuclear will, on receival, exchange copies of the opinions of the bodies consulted in accordance with the provisions of the above paragraph.

Section 7

The composition of the preliminary safety report referred to in paragraph 2 of the preceding Section is decided on a case-by-case basis by the Junta de Energia Nuclear and by the General Directorate for Electrical Services.

Section 8

The applicant may be invited either by the General Directorate for Electrical Services or by the Junta de Energia Nuclear to complete or amend the project or to supply certain information or additional clarifications for the purposes of the procedure.

Section 9

The General Directorate for Electrical Services is responsible for all the procedure relating to a construction licence and, in collaboration with the Junta de Energia Nuclear, prepares a report for the Government

Section 10

(1) The Government grants the licence for the construction of a power station.

(2) The construction licence remains subject to the compliance of the applicant with the conditions set.

Section 11

(1) Construction of the power station, including manufacture of the components and the tests remain subject to standing inspections by the General Directorate for Electrical Services and the Junta de Energia Nuclear in the fields of electrical safety and nuclear safety respectively.

(2) The general inspection plan is prepared by a working party made up of representatives of the General Directorate for Electrical Services and the Junta de Energia Nuclear who are attached to the inspection services; the working party is assisted by a representative of the undertaking holding the construction licence.

Section 12

(1) The following are subject to authorisation by the General Directorate for Electrical Services and the Junta de Energia Nuclear

(a) initial fuel charge;

(b) nuclear and pre-operational tests;

(c) power ramp and provisional operation.

(2) Before obtaining these authorisations, the undertaking must first present the final safety report and the detailed programme of these operations.

(3) The authorisations required in accordance with paragraph 1 are granted in the order given above and depend on the results obtained during the phase immediately prior to the particular request, while remaining subject to compliance of the holder of the authorisation with the conditions set, taking safety considerations into account.

(4) The equipment of the power station and the nuclear fuel charge can only be authorised if the "operator" Company provides proof that it holds a guarantee in accordance with the Act on third party liability for nuclear hazards.

Section 13

The composition of the final safety report referred to in paragraph 2 of the preceding Section, is decided on a case-by-case basis by the Junta de Energia Nuclear and the General Directorate for Electrical Services who may request the holder of the authorisation to complete the report or to amend it.

Section 14

(1) Operation of the power station is subject to prior authorisation.

(2) The request for an operating licence must be sent to the General Directorate for Electrical Services which requests the opinion of the Junta de Energia Nuclear.

Section 15

The General Directorate for Electrical Services is responsible for all the procedure relating to the operating licence and, in collaboration with the Junta de Energia Nuclear, prepares a report for the Government.

Section 16

(1) The Government grants the licence for the operation of a power station.

(2) The operating licence is subject to the compliance of the applicant with the conditions set

Section 17

Operation of the power station is subject to standing inspections by the General Directorate for Electrical Services and the Junta de Energia Nuclear in the fields of electrical safety and nuclear safety respectively.

Section 18

(1) The Company operating the power station must keep operating records, the model of which must be approved by the General Directorate for Electrical Services and the Junta de Energia Nuclear.

(2) The operating records mentioned in the preceding paragraph must be made available at all times to the bodies responsible for inspections.

Section 19

Alterations to the power station which affect the safety or operating conditions must be approved by the Junta de Energia Nuclear and by the General Directorate for Electrical Services.

Section 20

The qualifications required of the staff responsible for operating the reactor are determined by the Junta de Energia Nuclear.

Section 21

The powers vested in the Government under this text must be exercised in accordance with the provisions of Section 12 of Decree-Law No. 49-398.

Section 22

Matters which are not specific to nuclear power stations, namely, those relating to payment of taxes are governed by the legal provisions applicable to other types of power-producing stations insofar as they do not derogate from the present Decree.

Section 23

The uncertainties which should arise in the interpretation or implementation of the present Decree must be settled by joint decision of the Prime Minister and the Secretary of State for Industry, after consultation with the Junta de Energia Nuclear and the General Directorate for Electrical Services.

Done on 20th November 1972.

MODEL FOR BILATERAL AGREEMENTS ON THE VISITS OF NUCLEAR SHIPS*

Note by the Secretariat

This Model for Agreements on visits of nuclear ships was prepared within the Group of Governmental Experts on nuclear third party liability. At its meeting on 19th October 1972, the Steering Committee took note of this Model (see Nuclear Law Bulletin Nos. 9 and 10). As since then, the Secretariat has received a certain number of requests for the Model, it was decided to reproduce it in this issue.

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Article 1

For the purpose of this Agreement

(a) "Nuclear ship" means any ship equipped with a nuclear power plant, with the exception of a warship.

(b) "Licensing State" means the Contracting State which operates or which has authorised the operation of a nuclear ship under its flag.

(c) "Operator" means the person authorised by the Licensing State to operate a nuclear ship, or a Contracting State operating a nuclear ship.

(d) "Visit of a nuclear ship" means the entry and stay of that ship in the territorial waters, the internal waters or the harbours of the Host State.

(e) "Host State" means the Contracting State which receives a visit by a nuclear ship

(f) "Nuclear fuel" means any material which is capable of producing nuclear fuel, made radioactive by neutron irradiation incidental to the utilisation of nuclear fuel in a nuclear ship.

(g) "Radioactive products or waste" means any material, including nuclear fuel, made radioactive by neutron irradiation incidental to the utilisation of nuclear fuel in a nuclear ship.

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* The fact that the various footnotes to this Model Agreement allow certain derogations from the text shall not be taken to preclude the Contracting Parties from making drafting amendments or otherwise derogating from this Model Agreement if they consider it appropriate.

(h) "Nuclear damage" means loss of life or personal injury and loss or damage to property which arises out of or results from the radioactive properties or a combination of radioactive properties with toxic, explosive or other hazardous properties of nuclear fuel or of radioactive products or waste; any other loss, damage or expense so arising or resulting shall be included only if and to the extent that the applicable national law so provides.

(i) "Nuclear incident" means any occurrence or series of occurrences having the same origin which causes nuclear damage.

(j) "Nuclear power plant" means any power plant in which a nuclear reactor is, or is to be used as the source of power, whether for propulsion of the ship or for any other purpose.

(k) "Nuclear reactor" means any installation containing nuclear fuel in such an arrangement that a self-sustained chain process of nuclear fission can occur therein without an additional source of neutrons

(l) "Warship" means any ship belonging to the naval forces of a State and bearing the external marks distinguishing warships of its nationality

(m) "Applicable national law" means the national law of the Court having jurisdiction under the present Agreement including any rules of such national law relating to conflict of laws.

Article 2

This Agreement shall apply to visits of nuclear ships whose operation has been authorised by the Licensing State or which are operated by it*.

Article 3

(a) Visits of nuclear ships shall be subject to the prior authorisation of the Host State insofar as such authorisation is required by the authorities of that State in accordance with its national legislation and international law.

(b) The request for authorisation shall reach the competent authorities of the Host State in good time** and shall be accompanied by the documents required by the Host State.

(c) In addition to the request for authorisation, the first entry of a ship into a harbour of the Host State must be the subject of a prior notification which shall specify the harbour(s) to be visited and which

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* For the implementation of Article 2, see the footnote to Article 4(a)

** A period may be fixed by the Contracting Parties.

must reach the competent authorities of the Host State sixty days* prior to such entry, this prior notification shall be set at thirty days* for subsequent visits of the ship to the same harbours.

(d) The authorisation shall be valid for all the visits of the nuclear ship, for as long as it has not been withdrawn by the Host State.

Article 4

(a) The operator of the nuclear ship shall be absolutely liable in accordance with this Agreement for any nuclear damage upon proof that such damage has been caused by a nuclear incident, wherever it occurs, involving the nuclear ship or radioactive products or waste produced in that ship, when such damage has been suffered in the territory or the territorial waters of the Host State or on a ship registered in that State, during a visit to that State or during a voyage to or from that State**.

(b) Except as otherwise provided in this Agreement no person other than the operator shall be liable for such nuclear damage.

(c) Nuclear damage suffered by the nuclear ship itself, its equipment, fuel or stores shall not be covered by the operator's liability as defined in this Agreement.

(d) Where provisions of national health insurance, social insurance, social security, workmen's compensation or occupational disease compensation systems include compensation for nuclear damage, rights of beneficiaries under such systems and rights of subrogation, or of recourse against the operator, by virtue of such systems, shall be determined by the law of the Contracting State having established such systems.

(e) The operator shall not be liable with respect to nuclear incidents occurring before the nuclear fuel has been taken in charge by him or after the nuclear fuel or radioactive products or waste have been taken in charge by another person duly authorised by law and liable for any nuclear damage that may be caused by them.

(f) If the operator proves that the nuclear damage resulted wholly or partially from an act or omission done with intent to cause damage by the individual who suffered the damage, the competent courts may exonerate the operator wholly or partially from his liability to such individual.

(g) Notwithstanding the provisions of paragraphs (a) and (b) of this Article, the operator shall have a right of recourse

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* A different time-limit can be fixed by the Contracting Parties.

** The Contracting Parties may extend the liability regime laid down in the present Agreement to cases where the nuclear incident occurs in the course of a voyage which is not connected with a visit to the Host State.

(i) if the nuclear incident results from a personal act or omission done with intent to cause damage, in which event recourse shall lie against the individual who has acted or omitted to act, with such intent;

(ii) if the nuclear incident occurred as a consequence of any wreck-raising operation of the nuclear ship, against those who carried out such operation without the authority of the operator or that of the Licensing State, or that of the Host State;

(iii) if recourse is expressly provided for by contract.

Article 5

(a) The liability of the operator as regards one nuclear ship shall be limited to 100 million European Monetary Agreement* units of account in respect of any one nuclear incident, notwithstanding that the incident may have resulted from any fault of privity of that operator Such limit shall include neither any interest nor costs awarded by a court in actions for compensation under this Agreement.

(b) No limitation of liability, whether resulting from an international convention or national legislation in the maritime field, shall be put forward to defeat claims for compensation made in implementation of the present Agreement.

(c) The operator shall be required to maintain insurance or other financial security covering his liability for nuclear damage, in accordance with this Agreement. The amount, the type and the terms of the insurance or other financial security shall be specified by the Licensing State. That State shall ensure the payment of claims for compensation for nuclear damage established against the operator by providing the necessary funds up to the limit laid down in paragraph (a) of this Article to the extent that the yield of the insurance or other financial security is inadequate to satisfy such claims.

(d) The operator shall be required to produce at the request of the competent authorities of the Host State a certificate issued by or on behalf of the insurer or any other person having furnished financial security in accordance with paragraph (c) above. The certificate shall mention the name and address of the operator, as well as the object, amount, type and duration of such security. The information set out in the certificate shall at all times conform to the financial security maintained by the operator in accordance with paragraph (c) above, and may not be disputed by the person by whom or on behalf of whom it has been furnished.

(e) Each Contracting State undertakes to adopt such measures as are necessary to ensure implementation of the provisions of this Agreement, including all appropriate measures for the prompt and equitable distribution of the sums available for compensation for nuclear damage

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* However, this amount may be increased by common agreement between the Contracting Parties.

(f) Each Contracting State undertakes to adopt such measures as are necessary to ensure that insurance and reinsurance premiums and sums provided by insurance, reinsurance or other financial security, or provided by it in accordance with paragraph (c) above shall be freely transferable into the currency of the Contracting State in which the damage was sustained, of the Contracting State in which the claimant is habitually resident, or as regards insurance and reinsurance premiums and payments, in the currencies specified in the insurance or reinsurance contract.

Article 6

Whenever both nuclear damage and damage other than nuclear damage have been caused by a nuclear incident, or jointly by a nuclear incident and one or more other occurrences and the nuclear damage and such other damage are not reasonably separable, the entire damage shall, for the purposes of this Agreement, be deemed to be nuclear damage exclusively caused by the nuclear incident. However, where damage is caused jointly by a nuclear incident covered by this Agreement and by an emission of ionizing radiation or by an emission of ionizing radiation in combination with the toxic, explosive or other hazardous properties of the source of radiation not covered by it, nothing in this Agreement shall limit or otherwise affect the liability, either as regards the victims or by way of recourse or contribution, of any person who may be held liable in connection with the emission of ionizing radiation or by the toxic, explosive or other hazardous properties of the source of radiation not covered by this Agreement

Article 7

(a) Rights of compensation arising from Article 4 shall be extinguished if action is not brought within ten years* from the date of the nuclear incident**

(b) Where nuclear damage is caused by nuclear fuel, radioactive products or waste which were stolen, lost, jettisoned or abandoned, the period established by paragraph (a) above shall be computed from the date of the nuclear incident causing the nuclear damage; it shall in no case exceed a period of twenty years from the date of the theft, loss, jettison or abandonment**.

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* The Contracting Parties may provide by common agreement for a longer period with respect to compensation for deferred damage.

** The Contracting Parties may set a period of limitation of not less than three years from the date on which the person who claims to have suffered nuclear damage had knowledge or ought reasonably to have had knowledge of such damage and of the person liable therefor, provided that the time-limits established by paragraphs (a) and (b) shall not be exceeded.

(c) Any person who claims to have suffered nuclear damage and who has brought an action for compensation within the period applicable under this Article may amend his claim to take into account any aggravation of the damage, even after the expiry of that period, provided that final judgment has not been entered.

Article 8

(a) Where nuclear damage engages the liability of more than one operator and the damage attributable to each operator is not reasonably separable, the operators involved shall be jointly and severally liable for such damage. However, the liability of any one operator shall not exceed the limit laid down in Article 5.

(b) In the case of a nuclear incident where the nuclear damage arises out of or results from nuclear fuel or radioactive products or waste of more than one nuclear ship of the same operator, that operator shall be liable in respect of each ship up to the limit laid down in Article 5.

(c) In case of joint and several liability, and subject to the provisions of paragraph (a) of this Article

(i) each operator shall have a right of contribution against the others in proportion to the fault attaching to each of them,

(ii) where circumstances are such that the degree of fault cannot be apportioned, the total liability shall be borne in equal parts.

Article 9

No liability under this Agreement shall attach to an operator in respect of nuclear damage caused by a nuclear incident directly due to an act of war, hostilities, civil war or insurrection.

Article 10

In the event of an incident likely to involve the liability of the operator pursuant to this Agreement, the master of the nuclear ship involved shall immediately notify the competent authorities of the Host State and the authorities of the Licensing State, as well as the insurer or any other person who has furnished security in accordance with Article 5(c) above.

Article 11

(a) Under this Agreement, any action for compensation for nuclear damage shall be brought before the competent courts of the Host State*

* Another solution may be adopted by common agreement between the Contracting States so long as one single court is declared competent.

(b) If under this Agreement an action is brought before the court competent in accordance with this Article, no jurisdictional immunities may be invoked.

(c) If the Licensing State has been or might be called upon to ensure the payment of claims for compensation in accordance with paragraph (c) of Article 5 of this Agreement, it may intervene as party in any proceedings brought against the operator.

Article 12

(a) A final judgment entered by the court of a Contracting State having jurisdiction under Article 11 shall be recognised in the territory of the other Contracting State, except

(i) where the judgment was obtained by fraud, or

(ii) the operator was not given a fair opportunity to present his case.

(b) A final judgment which is recognised shall, upon being presented for enforcement in accordance with the formalities required by the legislation of the Contracting State where enforcement is sought, be enforceable as if it were a judgment of a court of that State.

(c) The merits of a claim on which the judgment has been given shall not be subject to further proceedings.

Article 13

Unless this Agreement provides to the contrary the legislation of the State of the competent court shall apply in a subsidiary capacity.

STUDIES AND ARTICLES

ARTICLES

REGIME GOVERNING NUCLEAR INSTALLATIONS IN FRANCE AFTER THE 1973 REFORMS

J. Hebert*
Head of the Nuclear Law Division
Electricité de France

INTRODUCTION

Nuclear installations for the purposes of the present Article are the "Large Nuclear Installations" listed in Section 2 of Decree No. 63-1228 of 11th December 1963, amended by Decree No. 73-405 of 27th March 1973.

Generally speaking this list is, intentionally, the same as that in Article 1(a)(ii) of the Paris Convention on Third Party Liability in the Field of Nuclear Energy. It does not therefore include reactors comprised in a means of transport (1). The French list differs however in two respects from that of the Paris Convention. On the one hand, Orders of 6th December 1966 and 25th January 1967 anticipating a

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* The ideas expressed, and the facts given in this Article are under the sole responsibility of the author.

(1) In accordance with the SOLAS Convention of 16th June 1960, ratified by France and published by Decree No. 65-445 of 29th May 1965, the first regulations concerning the safety of nuclear ships ("ship with a nuclear power source") were laid down in France by Decrees No. 68-206 of 17th February 1968 and No. 69-169 of 4th February 1969. These regulations do not however concern warships (Act No. 67-405 of 20th May 1967).

possible decision by the Steering Committee of the Nuclear Energy Agency, excluded from the scope of the Decree, either installations for manufacture, processing and conversion, or installations for storage, deposit and use of radioactive substances when the quantity or total activities of the substances held therein are below certain limits. Such small nuclear installations are generally governed by the legislation concerning establishments classified as dangerous, unhealthy or noxious (Act of 19th December 1917 - Decree No. 67-964 of 24th October 1967). The other difference between the two lists is that, the Decrees of 1963-1973 include, on the contrary, among large nuclear installations particle accelerators capable of giving particles an energy exceeding 300 MeV (Order of 16th September 1965) whereas the Exposé des Motifs (paragraph 9) of the Paris Convention places all accelerators outside the scope of the Convention.

I. ORIGIN AND DEVELOPMENT OF SPECIAL REGULATIONS GOVERNING NUCLEAR INSTALLATIONS UP TO 1973

Non-existence of special regulations before 1963

The publication in 1963 of special regulations in respect of construction and operation of nuclear installations may appear to have been somewhat belated in view of the fact that the first French reactor went critical in December 1948 and the Atomic Energy Commission (CEA) was instituted by Order No. 45-2563 of 18th October 1945. This Order was in fact published before the United States MacMahon Act.

This rather paradoxical situation would appear to be the result of the institutional and practical circumstances in which nuclear activities developed at that time in France. As set up in 1945, the CEA seemed in many respects a very original body as compared with the traditional form of administrative organisation. It was "very close to the Government", since it was placed under the direct authority of the Prime Minister, but at the same time enjoyed considerable freedom of action. Having been given among its tasks that of studying "measures to ensure the protection of persons and property against the destructive effects of atomic energy" and to "build nuclear power equipment on an industrial scale" a provision previously unknown to French administrative law had conferred on it, in order to carry out these tasks, the powers enjoyed by the Ministers concerned, in short the power, whenever necessary, to act in the place of the administrative authorities normally responsible. The CEA has not, it should be said, availed itself of this power, at least in the extreme form it might have taken.

Nevertheless, awareness of the high priority attached to nuclear development, as expressed by the 1945 enactments, and the fact that there was little knowledge of nuclear energy matters outside the CEA, probably explain the timidity shown during the 1950s by most of the traditional Government departments in applying the regulations in force, or adapting them to the nuclear field.

In a country governed by the rule of law, the fact that a body such as a French public undertaking is an offshoot or a means of action of the Government does not exempt it from compliance with the laws and regulations, adapted as necessary (administrative law) to take into account the fact that the work of the body concerned is recognised as serving the public interest. For example the CEA followed the procedure of compulsory acquisition of land for a public purpose in order to obtain

the necessary land to build its research centres, and that of authorisation for prospecting and mining operations. But as far as installations of an industrial character were concerned (reprocessing plants for example) the CEA could claim that it was not among the legal persons subject to the legislation most relevant to the case, namely the Act of 19th December 1917 concerning establishments classified as dangerous, unhealthy or noxious.

Since in addition, the CEA had shown great concern for the nuclear safety of its installations and the radiation protection of workers and the public, the need to adapt the regulations in force, though recognized, was not considered a matter of urgency.

In the early 1960s the obligation imposed on Member States of EURATOM (2nd February 1959) to subject certain nuclear activities to prior authorisation, the construction of large nuclear installations (power reactors, reprocessing or separation plants), in implementation of civil and military development programmes adopted as from 1955-59, and the fact that, in addition to the CEA, another public body, Electricité de France (EDF) was playing an ever-growing and increasingly independent part in such development, made it a matter of urgency to supplement legislation which approached the nuclear question from the institutional angle by regulations for administrative supervision suitably subdivided according to type of activity (large or small nuclear installations, artificial radioisotopes etc...) or to specific aspects or consequences of such activities (radiation protection, liability etc.).

This development was not limited to France, a few years earlier, probably owing to a difference in rates of industrial development and also perhaps to the gradual nature of EDF's arrival on the scene, the same change from institutional to functional legislation had been seen in the United States (Atomic Energy Act 1954) and the United Kingdom (Nuclear Installations Licensing and Insurance Act 1954).

On the other hand, in countries such as Germany which entered the field much later and left development from the start to private enterprise, legislation had to lay down from the outset the conditions for pursuit of the various nuclear activities (cf. the German and the Swiss Atomic Energy Acts of 1959 for example).

The Decree of 11th December 1963 is set out in the form of an outline enactment which determines in a precise manner only the purely administrative, procedural aspect of the scrutiny of application for authorisation to set up large nuclear installations. In this respect it has something in common with the United Kingdom Act referred to above, though it is less complete. On the other hand, this Decree differs considerably from the other Acts mentioned above, and particularly from their implementing regulations, since it makes no reference to a safety examination. It will also be noted that French law looked forward from the outset to application of the Paris Convention (2).

(2) This Convention was ratified by France on 9th March 1966 and published in Decree No. 69-154 of 6th February 1969. Furthermore, Act No. 68-943 of 30th October 1968 provides for various measures for implementing this Convention and also a transitional system pending the entry into force of the Supplementary Convention, also ratified by France, on 30th March 1966.

Layout of the 1963 Decree

Instead of issuing regulations specific to large nuclear installations, it might have been possible to adapt the system of the general law relating to dangerous or noxious industries, i.e. the so-called "classified establishments" (Act of 19th December 1917), as was done in Belgium (Act of 29th March 1958 and Royal Decree of 28th February 1963) and, in fact, in France for small nuclear installations (at present governed by Decree No. 67-964 of 24th October 1967). However, Government bodies, Universities and the CEA are not generally governed by this Act. The intention also was that the authorisation granted for large nuclear installations should be obtained prior to their being "set up", a vague term which no doubt means that such authorisation must be granted well before they are commissioned, whereas under the 1917 Act authorisation must precede "opening", i.e. operation. Last, but not least, the 1917 Act was applied at Département level, and it seemed preferable that the decision as to the desirability of granting authorisation and as to the conditions to be imposed for construction and operation, as well as supervision, should be centralised at national level, if only for considerations of the availability of competent personnel within the Administration.

The Decree of 11th December 1963 accordingly lays down the principle that the "setting up" of a large nuclear installation, by any legal person, shall be subject to prior authorisation granted by Decree. This Decree is made after an administrative investigation, including a report to the Ministers concerned, in principle a public enquiry, obtaining the opinion of an Interministerial Committee set up by the Decree and finally the concurring opinion of the Minister of Health.

The part played by administrative practice

Because of the lack of detail in the 1963 Decree the questions which it left unsettled have had to be solved by administrative practice. During almost 10 years' application of this practice it has become customary, for example, for a future operator to draw up safety reports and for these to be examined either by the internal Committees of the CEA or, in the case of nuclear power stations, by an ad hoc group of experts appointed for each power station from among the officials and specialists of the CEA and EDF. At the end of such examination these experts used to draw up the regulations included in the draft Decree. The Decree provided for only one authorisation, granted at an early stage in the implementation of the installation project, but circumstances (rapid progress of technology entailing successive amendments to the project) drew attention to the value - already acknowledged in other countries' regulations - of an administrative act granting authorisation for installations to go critical or enter into industrial service. In the case of power stations this administrative act took the form of Ministerial approval, of the main safety arrangements and general operating instructions before the installation was put into normal operation. Implicit use of the maxim "specialia generalibus derogant, generalia non specialibus" made it possible to avoid application of the 1917 Act to the various depots or installations (acids, fuel oil, for example) which although included in the list of classified establishments are within the perimeter of a large nuclear installation, and to provide in the Decree authorising construction for the making of special regulations for these depots or installations. Finally, checks on pollution of radioactive origin, which Act No. 61-842 of 2nd August 1961 and the Decree of 1963 made the responsibility of the Central Service for Protection against Ionizing Radiations (SCPRI) were to be carried out in the

light of arrangements concluded between the Minister of Health, who was responsible for the Service, and the operator. These arrangements, the validity of which was doubtful, had the merit of solving practical problems with regard to discharge of liquid or gaseous radioactive effluents (for example rules for calculating the average activity in terms of volume of effluents the discharge of which was authorised)

II. THE 1973 REFORMS

The experimental character of the 1963 Decree, and the pragmatic approach of administrative practice naturally led, after a few years' application, to consideration of improvements that might be made in the regulations. To this end, a working party set up in 1971 by the Secretary-General for Energy made a critical review of past experience and new requirements and drew up three draft Decrees.

The first, which was signed on 27th March 1973 (Decree No. 73-405) amends Decree No. 63-1228 of 11th December 1963.

The second concerned discharge of radioactive effluents. It has since been divided into two draft Decrees, one concerning liquid effluents, and the other gaseous effluents, because of the difficulty of making a single Decree consistent with the general law relating to water and to air pollution. Their signature was delayed owing to a small problem of constitutional law resulting from a provision of the Act of 16th December 1964 on water.

The third draft Decree concerns protection of workers in large nuclear installations against ionizing radiations. It was prepared in agreement with the Ministry of Labour, but signature has been delayed owing to the need to obtain the opinion of the European Commission (Article 33 of the Treaty of Rome) and various national committees, etc

In order to understand the importance of the reforms effected or planned in 1973 two factors must be taken into account. On the one hand, a trend that has been apparent since the 1950s has been confirmed, since Decrees Nos. 70-878 of 29th September 1970 and 72-1158 of 14th December 1972 give a new definition of the work and organisation of the CEA or of procedures for exercise of Government authority over that public body, to some extent bringing the CEA within the ranks of public services, although it nevertheless remains the secular arm of the State in the nuclear field. At the same time, having regard in particular to the interest now shown by the public in environmental problems, the Government felt that it must have the means to exercise its authority to issue regulations in the matter of nuclear safety, and show its independence in this respect of the public bodies specialising in nuclear affairs. Decree No. 73-278 of 13th March 1973 accordingly set up, under the authority of the Minister for Industrial and Scientific Development, firstly, a Higher Council for Nuclear Safety, as an advisory body composed of parliamentarians and other persons not members of Government departments, who should therefore be in a position to bring up matters of concern to public opinion, and secondly a Central Service for Safety of Nuclear Installations, the latter's task being to prepare technical regulations of a general character or relating to a specific installation, to follow the research work carried out in public establishments and obtain information on measures taken abroad, to organise inspections of installations and to provide a public information service.

Since the Decrees of 13th and 27th March 1973 were prepared separately, this gave rise to a problem of co-ordination which was solved by the Ministerial Decisions and Instructions of 27th March 1973. It is in these last texts, which were not published in the Official Gazette, that we find the measures taken with a view to assessment of the nuclear safety of installations, probably the essential element in any system of authorisation applicable to nuclear installations.

The main reforms introduced by this group of enactments are the following

- the Decree of 27th March makes only minor amendments in the administrative procedure for examination of applications for authorisation of construction, though this does not mean that these amendments are without practical importance. There is, for example, a concern to achieve stricter concordance between the Decree and the Paris Convention, a concern which is evident in the definition of large nuclear installations, also noteworthy is the acceptance of the concept of nuclear site, this being defined in accordance with the recommendations of the EURATOM Commission of 28th October 1965. The limitation of cases and circumstances in which a local enquiry is not compulsory, approval in principle of earlier administrative practice in respect of installations included in the list of "classified establishments", on condition that they are situated within the "perimeter of the installation" (a concept which existed in the sense of "site" in the 1963 Decree and has thus taken on a completely different meaning in that of 1973). Attention should be drawn, in this connection, to the tendency to avoid separate enquiries, the local enquiry, or, in practice, the enquiry which must precede a declaration that setting up an installation is in the public interest to which the application for authorisation for construction is subject may also replace the administrative enquiry provided for by the 1917 Act.

  This preference for the holding of a single public enquiry, covering the various aspects of the installation on which it is necessary to obtain the comments of the population concerned, should also be apparent in future decrees on radioactive effluents.

  - The respective tasks of the various supervisory bodies have been defined. It should be noted that although the supervision of radioactive effluents is to be dealt with in separate decrees, the 1973 Decree makes the officials of the SCPRI (Central Service for Protection against Ionizing Radiations) responsible for applying these regulations. This provision is not however incompatible with the tendency to separate those aspects of nuclear safety, falling within the competence of the Minister for Industrial and Scientific Development from radiation protection for which the Minister of Health or the Minister of Labour is competent.

  - It is planned to establish general technical regulations concerning the safety of nuclear installations. It is probable that in their overall conception these regulations will be similar to those relating to steam or gas pressure equipment (Act of 23rd October 1943 - Decrees of 2nd April 1926 and 18th January 1943 as amended, which were applied

to the nuclear field by the Order of 15th June 1970 concerning prestressed concrete reactor pressure vessels. These regulations endeavour to reconcile the development of technology through the wide margin of choice and responsibility allowed to constructors with regard to materials and specifications, with the laying down of provisions defining safety regulations confirmed by experience or the power to prohibit continued use of equipment that has been found to be dangerous.

- the main procedures for nuclear safety assessment were defined in the Instructions and Decisions of 27th March 1973. It is the responsibility of the Central Service for the Safety of Nuclear Installations to have the safety inspection carried out, and, in agreement with the competent Directorate of the Ministry in the case of nuclear power stations, to prepare the draft Decree for authorisation of construction and submit its provisions to the Interministerial Committee for Large Nuclear Installations.

The safety investigation is carried out by the standing Committee responsible for studying the technical aspects of the safety of nuclear installations which is competent for the particular type of installation The Decision mentioned above in fact set up three standing committees under the authority of the Central Service, the first being competent for reactors, the second for accelerators, and the third for large nuclear installations. In contrast with the earlier practice of setting up ad hoc groups to study each application for authorisation, each of these committees now comprises a fixed nucleus of members drawn from the Ministry or appointed on the proposal of the CEA (for the reactor Committee, on the proposal of EDF). However, for the examination of safety problems of a given installation the permanent nucleus is reinforced by Heads of the External Services of the Ministry, and Inspectors for the nuclear installations concerned. The files - and in particular the safety reports prepared by the operator - are transmitted to the CEA for scrutiny and presented to the relevant committee by a CEA expert acting as rapporteur.

It may be noted in this connection that although the 1970 and 1972 Decrees may be considered to reflect a certain limitation of the powers of the CEA, the Government is obliged to call widely on the services of the specialists of that body.

In the case of reactors, the same procedure is followed for examination of the reports which must be submitted before the first charge, before commissioning or, in the course of operation, before making changes in the installation or operating rules. The Instruction specifies the content of such reports.

The general rules for operation, and then the putting of the installation into normal operation, are approved by the Head of the Central Service for the Safety of Nuclear Installations.

The tendency to distinguish between nuclear safety and radiation protection, a tendency which can be clearly seen in the 1973 texts, probably as a result of the division of responsibility between the Minister for Industrial and Scientific Development and the Minister of Health, by no means excludes co-ordination in organisation. In addition to strong Ministry of Health representation on the Interministerial

Committee for Large Nuclear Installations, the Head of the SCPRI is an ex officio member of the Higher Council for Nuclear Safety and of the restricted section responsible for keeping touch with the work of the Central Service for the Safety of Nuclear Installations.

Moreover, the requirement with regard to the concurrence of the Minister of Health for publication of the decree of authorisation has been maintained, and provision made for prior contact or consultations between the Central Service for Safety and the Central Service for Protection against Ionizing Radiations during preparation of a draft Decree authorising construction or authorising discharge of wastes. The measures decided are of a pragmatic character and it is to be regretted that the drafting of these enactments did not give rise to a more precise definition of the concept of nuclear safety and its connection with the related concept of radiation protection.

CONCLUSION

The French regulations concerning authorisation of nuclear installations, as they developed in the past as well as at their present stage, provide a good example of a pragmatic, step-by-step approach to the problem. The approach is not without analogy with that of United Kingdom regulations, as opposed to the more dogmatic, structured and detailed United States and German regulations. The French regulations place the emphasis on procedures for administrative investigation, barely touching upon technical criteria for the assessment of nuclear safety. Certain measures are planned along these lines, but the aim would seem to be to fix targets rather than to impose methods or standards. In this connection, although foreign practice has already been taken into consideration, a certain difference in conception, concerning the form in which these technical provisions should be set out, seems likely to emerge in contrast with probable developments in various foreign countries, so that harmonization of such texts may also prove difficult. On other points, the French regulations do not appear to have been fully worked out, there are, for example, no specific provisions in the recent Decree of 27th March 1973 concerning problems connected with the final shutdown of nuclear installations.

ON MODERNISING THE PARIS CONVENTION

Professor Norbert Pelzer*
Institute of Public International Law
- Department of Nuclear Law -
University of Gottingen

REASONS FOR REVISING THE PARIS CONVENTION, AND OBJECTIVES

1. There are at present two reasons for exploring the possibility of updating the Paris Convention of 29th July, 1960 as amended by the Additional Protocol of 28th January, 1964. The first reason is purely formal: Article 22 (c) of the Paris Convention provides that a conference to consider revisions to the Convention be convened by the Secretary-General of the O.E.C.D. five years after its coming into force. As the Convention came into force, pursuant to Article 19 (b) thereof, on 1st April 1968, the date for holding the Revision Conference is now due. Preparations are being made by the O.E.C.D. Nuclear Energy Agency as also by the Governments of Member countries**.

The second reason is a material one, and it is sufficiently important in itself to justify holding a Revision Conference. It is in fact necessary to consider whether the Convention, as drawn up at the end of the 1950s, can still today, and in the light of foreseeable developments, provide an up-to-date system of liability law appropriate both to the nuclear risks now involved and to the economic potential of nuclear energy. This is indeed a moot question, since the use of nuclear energy for peaceful purposes has made a decisive breakthrough in recent years. Throughout the world, the network of nuclear power plants is growing and the capacity of individual generating units is increasing. The situation today is thus markedly different from what it was at the time of the signing of the Paris Convention: at that time, the idea of nuclear power plants of present-day capacities, existing in the numbers in which they now exist, was all but inconceivable. At the same time, however, and despite the continued development of safety techniques, the potential hazards have also increased. The more nuclear power plants there are, the greater becomes the statistical probability of an accident. Also, the damage resulting from an accident is likely to increase with the capacity of a reactor.

Such considerations cannot lightly be dismissed as too theoretical. Rather, they call for a rethinking of the whole question of safety with respect not only to the framing of preventive safe-guarding measures but also to the system of compensation provided by liability law. Law-makers would be ill advised not to take due account of such a transformation of the original situation, which has

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* The ideas expressed in this article are under the sole responsibility of the author.

** See page 20 (note by the Secretariat).

in turn led to an increase in the hypothetical risks involved in the use of nuclear energy. In addition, public opinion has now become more critical in matters of environmental protection, and many people's attitude towards the use of nuclear energy is one of reserve, unease or outright dissent. This should also be a motive not only for keeping constant watch on safety standards, but also for providing an up-to-date nuclear liability law corresponding to the risks involved. In view of the danger of damage being caused across national borders in geographically confined areas, above all in Western and Central Europe, an international harmonisation of laws has become a particularly urgent matter.

The following is intended as an investigation of whether the liability regime provided by the Paris Convention still works in the changed circumstances we have indicated, and whether it is able to guarantee fair compensation to the victims of nuclear incidents. The conclusions reached will, it is hoped, serve as a stimulus to the deliberations of the Revision Conference.

We need not, to be sure, expect any unduly spectacular results from this Conference. The revision of multilateral conventions is a difficult process, conducted at a number of levels, in which a compromise solution has greater chance of success than any radical overhauling, however proper and desirable many may consider this to be. A further factor in this particular case is that criticism of the provisions of the Paris Convention was first and foremost voiced in scientific writings published in Germany and in Austria. The majority of the remaining States have adopted, when they have not already formally ratified the Convention, the most important principles of treaty law through the enactment of national nuclear liability laws. In internation relations, this has led to a consolidation of the treaty law currently in force, which will be very difficult to undo. We should, however, beware of automatically concluding from this actual situation that treaty law is superior to all other nuclear liability regimes. Such a conclusion would be improper if only because no actual cases are, fortunately, known to date of treaty law having been applied with respect to third party damage. It is rather more a matter of reconsidering, with proper dispassion, the present state of affairs and of exploring where necessary, new solutions. In this, due regard should also be given in particular to the original aim of the authors of the Paris Convention, namely, that "The elaboration of a special regime for third party liability should as far as possible provide a uniform system for all Western European Countries" (1).

HIGHLIGHTS OF A REVISION OF THE PARIS CONVENTION

Under Article 3 of the Paris Convention, the operator of a nuclear installation is liable for damage caused by nuclear incidents even without proof of "fault". It is generally recognised that such "absolute" liability (according to German legal terminology "Gefahrungshaftung" , that is, "liability for endangerment") is the only form of liability which fits the risks involved. We may safely start from the assumption that this analysis will remain unaltered for the foreseeable future. Nevertheless, it is arguable whether the detailed elaboration in the Convention of the principle of absolute liability is always cogent and to the point.

(1) Expose des Motifs, paragraph 3.

Legal channelling

The principle of the sole and exclusive liability of the operator of a nuclear installation (Article 6 (a) (b) usually referred to as "legal channelling of liability" is a particularly controversial one in the Federal Republic of Germany (2) and in Austria (3). We need not dwell further on this controversy here. Even its advocates cannot however deny that it cuts an extremely unusual figure in the law of liability. The placing of liability solely on the operator of the nuclear installation and the exonderation of all other persons from any possible liabillty introduces anomalies into the legal framework of the economy. Areas of exemption in the liability law are thus granted to the supplies which are not to be found in any other branch of the economy. If, however, the principle of legal channelling has prevailed at the international level, this means that most States do not consider the dangers we have indicated as being so great as

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(2) Cf. for example, Fischerhof, Das problem einer dogmatischen Begrundung der rechtlichen Kanalisierung der Haftung auf den Betreiber enier Kernanlage, Versicherungsrecht 17 (1966), p. 601 et seq. (French version in: Broit nucleaire europeen, Paris, 1968, p.111 et seq); Kanno, Gefahrdungshaftung und rechtliche Kanalisierung im Atomrecht, Dusseldorf 1967, Klingsporn, Die Haftung fur Atomschaden, Deutsche Richterzeitung 1961, p. 109 et seq. Pelzer, Die rechtliche Kanalisierung der Haftung auf den Inhaber einer Atomanlage - ein rechtlicher und wittschaftlicher Fehlgriff? Versicherungs recht 17 (1966) p. 1010 et seq.; Pelzer, Internationale Atomshaftungs konventionen, in: Fischerhof, Deutsches Atomgesetz und Strahlenschutz recht, Volume 2, Baden Baden 1966, p.332 et seq.; Weitnauer, Die Deckung des nuklearen Risikos, Der Betrieb 1960, p. 284.

(3) Cf. in particuler Edlbacher, Bedeutet die Kanalisierung der Haftung im Atomenergierecht einen Wendepunkt? Osterreichische Juristen-Zeitung 22 (1967), p.447 et seq. (479 et seq.)

to outweigh the advantages of this legal instrument (4). Any attempt to do away with this principle at the Revision Conference is, therefore, surely doomed in advance.

By modifying the provisions of the Convention with regard to the right of recourse (Article 6 (f)) it might, however, be possible to make the channelling of liability somewhat less absolute and, hence, more likely to be acceptable to its opponents. Were the opportunities for recourse to be extended, the anomalous situation entailed by the exclusive placing of liability on the operator might to a large extent be brought back to normal. This proposal will doubtless meet with opposition from the suppliers of nuclear equipment and materials, who are favoured by the present regulations. It will, however, be necessary to consider whether or not the nuclear industry of the 1970s is in a position to abide by the same rules as those governing the rest of the economy.

The possibilities of recourse provided under Article 6 (f) can be extended in various ways without thereby completely undermining the principle of legal channelling. At present, recourse under Article 6 (f) (i) is only possible when the damage results from "an act or omission done with intent to cause damage". This formulation is so narrow that it makes such right of recourse wholly irrelevant, since it will almost never be possible to prove an intent to cause damage. Here is surely a case for extending the conditions governing the right of recourse to include damage due to gross negligence.

Moreover, it hardly appears very meaningful to limit this right to recourse against natural persons only. In view of the potential magnitude of the damage, claims against natural persons may only seldom be counted on to satisfy fully the claims of recourse. Moreover, one's sense of justice revolts against such a rule. Should the natural person "acting or omitting to act" alone be made liable, and the firm in whose service the person causing the damage had acted be exempted from all recourse claims against it? Here again, the reasonable and fair rule is the normal one, namely, that the firm, which as a rule is likely to be a legal person, is also subject to the right of recourse.

Lastly, the question might also be explored - and this would not entail amending the Convention - of providing, by means of national legislation, incentives to make regular use of the opportunity open to make contractual arrangements concerning such

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(4) Cf. also the somewhat cautious position taken by Demoures "La responsabilité de l'exploitant nucléaire au regard de la réglementation française de la responsabilite civile (Principe de canalisation), Droit nucléaire européen, Paris 1968, p. 121 et seq. Cf. also the criticisms made by Belser (Switzerland) in "Atomversicherungsrechtliche Fragen unter Berucksichtigung der internationalen Konventionen", Gottingen 1963, p. 61 et seq.

recourse [Article 6 (f) (ii)]. There is no need to amplify this further here, as there are many ways and means available to the legislature devising such incentives.

Scope of liability

Under Article 3 (a) (ii), the Convention exempts the operator of liability for "on-site damage" and damage to the means of transport upon which the nuclear substances involved were located at the time of the nuclear incident. Insofar as the provision excludes compensation for on-site damage (on his own site), it is a sensible and cogent one. Damage suffered by the operator of the nuclear installation who is at the same time the owner thereof does not constitute a case if third party liability falling within the scope of the Convention. But even when the operator liable and the owner of the installation are different persons, it seems proper to deny to the owner recourse against the operator under the Convention.

What is open to question, however, is to what extent the exemption from liability is granted. By the terms of Article 3 (a) (ii) 1 , exemption from liability extends not only to damage to the nuclear installation itself but also to damage to "any property on the site of that installation which is used or to be used in connection with that installation". This formulation leaves it unclear as to whether the property of the operator alone, or that of other third parties also is to be understood. For example, is the equipment of a firm carrying out repairs within the installation to be tacked on to the "on-site property" and thus excluded from the area of the operator's liability? There appears to be absolutely no convincing reason for such legal discrimination against the property of third parties. Moreover, such a provision can have arbitrary consequences. The Article in fact deals only with whether the non-installation property is located "on the site of that installation". In other words, a person leaving his equipment off the site will, under Article 3, be compensated in the event of a nuclear incident, while a person using his equipment on the site, even when he stands in the same legal position as the other in relation to the operator, does not receive anything. Here, a new formulation is called for to clarify this sub-paragraph.

There is a similar situation with regard to exemption from liability in cases of damage caused to the means of transport upon which the nuclear substances involved were located (Article 3 (a) (ii) 2. It is not apparent why, provided that the means of transport does not belong to the operator of the installation, such damage is not to be treated as genuine third party damage entailing an obligation on the operator to provide for compensation. The authors of the Convention clearly perceived this dilemma, since they granted the Contracting Parties un er Article 7 (c) the right not to apply the exception provided in Article 3 (a) (ii) 2, under certain given conditions. The Commission of the European Communities as also the NEA Steering Committee for Nuclear Energy have consequently seized this opportunity to recommend to Member States not to apply the exemption from liability provided in Article 3 (a) (ii) 2. (5) One of the tasks facing the Revision Conference will be to consider whether this provision cannot simply be deleted.

Finally, also paragraph (c) of Article 3 is among the provisions which call for reconsideration. Should not all damage resulting from ionizing radiations emitted by any other sources of radiation be included without exception in the area of the operator's liability under the Convention? Here again, we find a corresponding recommendation of the Commission of the European Communities (6). There are, in fact, cogent reasons for such inclusion: the legal position of the injured party is thereby considerably improved, since he is not required to concern himself with the difficult problems of proving what kind of radiation caused the damage; he need simply demonstrate that it resulted from radiation from one source or another in the nuclear installation. On the other hand, such a solution also requires that the legal policy question be settled as to whether or not it is appropriate to include all other sources of radiation in the extraordinary liability regime provided by the Paris Convention. Particular weight should be given in such considerations to the principle of legal channelling and its consequences for legal policy.

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(5) No. I, 1 of the Second Recommendation of the Commission to the Member States of 6th July 1966 (66/22/Euratom) on the harmonisation of provisions implementing the Paris Convention of 29th July 1960 (Official Journal of the European Communities 1966, page 2553).

(6) No.I, 3 of the Recommendation of the Commission to the Member States of 28th October 1965 (65/42/Euratom) on the harmonisation of provisions implementing the Paris Convention of 29th July 1960 and the Brussels Supplementary Convention of 31st January 1963 (Official Journal of the European Communities 1965, page 2995).

The territorial scope of application

Article 2 (7) provides that the Paris Convention does not apply either to nuclear incidents occurring in the territory of non-contracting States or to damage suffered in such territory. National legislation of the Member countries in whose territory the nuclear installation of the liable operator is situated can, however, provide otherwise. The Convention thereby enshrines in concrete form the strict principle of territoriality.

Inasmuch as all laws and indeed international conventions are by their nature applicable in principle only in their territorial field of application, this represents no departure from the norm. This principle is, however, to some extent restricted in legal situations which affect persons or property outside that field. In the event of damage occurring within national boundaries which has repercussions in other countries, the court before which the case is brought determines in accordance with the principles of the applicable private international law which national law applies. In this way, domestic law can also have effect beyond the borders of the legislating country. For example, should a reactor situated in a Contracting State of the Paris Convention cause damage in a non-contracting State, the court before which the injured party brought an action could, in principle, apply either the law of the Contracting State or that of the non-contracting State to the case. Here, Article 2 of the Convention introduces the anomaly, as compared with the general rules governing cases in which damage caused in one country has repercussions in other countries, of excluding the application of the provisions of the Convention (Article 2, second alternative). It provides that the injured party must be referred either to the law of the non-contracting State or to the general provisions regarding tortuous liability in the civil law of the Contracting State (for example, Art. 1384 of the French Code Civil or 823 of the German BGB . The same applies in cases where a citizen of a Contracting State suffers damage as a result of a nuclear incident occurring in a non-contracting State (Article 2, first alternative) (8).

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(7) Cf. also Article 23 (a) as also the exception to the principle of Article 2 provided in Article 6 (e).

(8) Naturally, only those cases are meant in which responsibility for the nuclear incident is to be attributed to the operator of a nuclear installation located in a territory covered by the Convention. We are here concerned first and foremost with the transport or transit of nuclear substances through non-contracting States. Cases where nuclear substances are sent to, or by, a person in the territory of a non-contracting State, are governed by the special provisions contained in Article 4 (a) (iv) and 4 (b) (iv).

The legal consequences to be drawn from this are that, with respect to nuclear incidents which occur in non-contracting States or which cause damage in their territory, the Contracting States of the Paris Convention possess no particular nuclear liability law. This results, however, in harming persons who suffer damage from such incidents: they cannot have recourse to the strict liability regime provided by the Paris Convention to protect the interest of injured parties. From the legal point of view, this is questionable on two counts.

Insofar as nationals of Contracting States lose all claims to compensation under the Convention in cases where the provisions of Article 2 are applicable, it is open to question whether such unequal treatment in relation to other nationals of Contracting States is warrantable. The principle of equal treatment of all citizens of Contracting States is explicity enshrined in Article 14 (a) of the Convention. It is, therefore for consideration whether Article 2 is not a variance with the aim and object of Article 14 (a), namely, to provide equal protection to all nationals of Contracting States. Irrespective of any provisions of the Convention, however, the equality of all citizens before the law should also be the underlying principle of government in all Contracting States. The discrimination which arises out of Article 2 is, therefore, questionable also from the point of view of current national constitutional law or current government practice.

Insofar as Article 2 excludes the right to compensation in cases of damage suffered in non-contracting States, it is open to doubt whether such a provision is admissible in international law. This doubt arises out of the potential dangers involved in the use of nuclear energy. It is a recognised principle of international law that no State may permit or tolerate activities on its territory which may possibly have harmful effects on the territories of other States (9). In view of their theoretical capability for causing damage, the operation of nuclear installations would, in principle, be considered as such an unwarrantable activity. Nevertheless, States have, up to the present day, allowed the operating of nuclear installations. A closer analysis reveals, however, that such authorisation is subject to certain conditions, and that their operation is not considered to be admissible in every case in accordance with international law. For this purpose, two conditions must in fact be met: the nuclear installations must, firstly, satisfy specific safety standards and be subject to State inspection

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(9) Cf. in particular the ruling of an American-Canadian court of arbitration in the Trail-Smelter Case (Report of International Arbitral Awards Vol. III, p. 1905 et seq.) Likewise the ruling of the International Court of Justice in the Corfu Channel Case (International Court of Justice Reports, 1949, p. 22).

and, secondly, there must be a law of liability in force tailored to the special risks involved which guarantees just compensation for damage suffered. This is illustrated particularly clearly in the treatment of nuclear merchant ships in international trade. It is no doubt still somewhat premature to suggest that these principles have already become incorporated into international customary or common law. It may, however, be asserted with all due caution that a standard practice among States is being established in this respect.

If the meaning of Article 2 of the Paris Convention is considered in this light, it is at once apparent that the exemption from liability for damage suffered in non-contracting States is incompatible with the stated principles of international law, insofar as they govern safeguards to neighbouring countries. No liability is provided by the Convention for damage suffered in non-contracting States. In relation to non-contracting States, the contracting States of the Paris Convention do not, consequently, benefit from a nuclear liability regime tailored to the risks involved such as is provided by international law.

For these reasons it would appear imperative simply to delete Article 2 (10). It will then be possible to ascertain, in accordance with the rules of private international law, whether or not the provisions of the Convention are applicable in each particular case of damage suffered outside the Convention territory.

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(10) This issue is the subject of two recommendations of the NEA Steering Committee for Nuclear Energy. Admittedly, the recommendation does not call for the complete abrogation of Article 2, but only for the inclusion of damage suffered on the high seas and in Contracting States which results from nuclear incidents occurring in non-contracting States. Such a limited enlargement of its scope of application is not, from the standpoint taken here, considered to be adequate. Cf. also Article 2 (a) (ii) of the Brussels Supplementary Convention.

The exemption from liability provided by Article 9

Article 9 of the Paris Convention exempts the operator of the nuclear installation from liability when damage can be attributed to a nuclear incident that is directly due to armed conflict, hostilities, civil war, insurrection or a grave natural disaster of an exceptional character (11).

This Article raises certain problems with regard to its drafting and its objectives.

Insofar as its wording is concerned, it is open to doubt whether the incidents which give rise to exemption from liability can be determined with sufficient clarity. While the terms "armed conflict" and "hostilities" are no doubt intended to include all forms of armed international strife, the terms "civil war" and "insurrection" are meant to designate cases of domestic strife. In the context of modern methods of armed strife, these categories are too rough to cover all cases in point. If, for example, we attempt to categorise the politically motivated terrorist acts and the taking of hostages of recent times (for example, the massacre which occurred during the 1972 Olympic Games in Munich), it becomes clear that none of the terms used in Article 9 fits, although it is the manifest aim and object of the Article to encompass such events. Similar ambiguities exist in connection with violent domestic strife, as for example student disturbances and political acts of violence. Such cases do not amount to actual insurrection or civil war, yet the situation as regards liability is a comparable one. In its present wording, therefore, Article 9 gives rise to legal uncertainties which neither the operator of the nuclear installation nor the injured party need reasonably be exposed.

It may, moreover, be questioned whether the objective of the Article is indeed a desirable one. Is the operator of a nuclear installation in fact to be exonerated from liability in the event of incidents such as those referred to in Article 9? The borderline situations outlined in the foregoing paragraph indicate that cases of damage occurring as a result of such incidents are far more likely than those due to "normal" circumstances. The eventuality of a reactor falling into the hands of extremist groups whether local or foreign, who, either from ignorance or for purposes of political blackmail, cause a nuclear incident, is today by no means a mere figment of the over-anxious jurist's imagination. A nuclear incident caused by violent means is at least as likely an eventuality as one due to air accidents, to other external causes or to technical or human failures. In such circumstances, is Article 9 to be invoked against the injured party as a possible ground for exonerating the operator from liability? An up-to-date nuclear liability law ought, rather, explicitly to include such cases also in its system of protection of victims. Otherwise the achievement of the goals set

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11. In the case of natural disasters, national legislation may provide otherwise.

forth in the Preamble to the Paris Convention will be seriously jeopardized.

Maximum amounts of liability and time limits for bringing an action for compensation

(a) The maximum amount of liability of the operator of a nuclar installation for damage caused by a nuclear incident is, according to Article 7 (b) of the Paris Convention, 15 million units of account. This amount may be lowered by national legislation to 5 million units and it may also be raised, provided that financial security is available. Together with the sums made available from public funds as provided by the regime established in the Brussels Supplementary Convention of 31st January 1963/28th January 1964, the total sum available for compensation purposes amounts to 120 million units of account (Article 3 of the Brussels Supplementary Convention). Both the maximum amount of liability of the operator and the maximum amount stipulated by the Brussels Convention require to be reconsidered.

The relative modesty of the maximum amount of liability prescribed by the Paris Convention is to be explained by the principle set forth in Article 10 that financial security must be commensurate with liability. At the time of the signing of the Convention, in 1960, it was in fact all but impossible to obtain financial security from private sector sources for a maximum amount of liability that corresponded to the risks involved. It is pointed out with good reason in the Exposé des Motifs that "Even with a limitation, it will not always be easy to find the necessary financial security to meet the risks" (12). Today, the situation is no longer the same. True, private insurance companies cannot even today provide unlimited cover. By marshalling the resources of international reinsurance and by "pooling" the risks, it is, however, possible to obtain cover for substantially greater amounts of liability than 15 million units of account. Moreover, the energy industry which operates the nuclear power plants should, at least in the highly industrialised countries, also be in a position to develop and to finance, for example by setting up a common fund, arrangements for collective financial security. Considering the financial security that is required, fifteen million units of account are today no longer a purely financial ceiling which will never be exceeded. The doubling of the maximum amount of liability to 30 million units of account would appear to be a thoroughly realistic course of action.

The raising of the maximum amount of liability is, however, not only possible for the reasons already outlined - it is also imperative. The limitation of the liability of the operator of a nuclear installation to 15 million units of account is in no way proportionate to the hypothetical risks involved in connection with nuclear installations of present-day capacities. Of "liability" in any true sense of the term there can be no question. The modest amount must rather be considered as being exceptionally favourable treatment granted with a view to promoting the nuclear industry. If

(12) Exposé des Motifs, para. 43.

we consider that the operators of nuclear installations take out insurance on property to the value of many hundred million units of account, the disparity in relation to the maximum amount of liability becomes particularly clear. This would be a difficult matter to justify to public opinion. The industry exposes itself here to the justified attacks of the opponents of the use of nuclear energy.

In this connection, the question must also be considered as to whether the maximum amount of 120 million units of account prescribed by the Brussels Supplementary Convention is still adequate. This touches upon the question of a possible revision of this Convention also (13). In the event of a major catastrophe involving a reactor, and bearing in mind the dwindling value of money in all countries, 120 million units of account is undoubtedly too small a sum to allow all persons who suffered damage to be adequately compensated. Supplementary State assistance is sure to be needed. Under these circumstances, it may be asked whether it is not more advisable to raise substantially the maximum amount in Article 3 of the Brussels Supplementary Convention.

(b) Article 8 of the Paris Convention provides that the injured party's right to compensation shall be extinguished if action for compensation is not brought within ten years. In view of the eventuality of delayed damage, ten years is surely too short a period. The extending of this period would mean a real improvement in the protection afforded to victims (14). Here again, to be sure, the problem arises as to whether financial security can be made available for such an extended period of liability. The international insurance community will have to assess for how long a period it can guarantee cover. Should it emerge that an extension of the ten-year period is beyond the means of the insurance community, it will then be necessary to explore possibilities of State-provided cover. It might then be found expedient to extend correspondingly the system of cover provided out of public funds as prescribed by the Brussels Supplementary Convention.

CONCLUSIONS

It has emerged from this account that, in a series of important points the Paris Convention no longer fully meets the

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(13) Cf. Article 16 (b) of the Brussels Supplementary Convention.

(14) National legislation may already establish a longer period than ten years, provided that measures have been taken to cover the operator's liability (Article 8 (a), second sentence).

requirements of an up-to-date nuclear liability law which corresponds to the risks involved. This does not mean that the system as a whole, together with its individual provisions, needs to be completely overhauled. It is worth noting that, in particular, the provisions governing liability for damage by transportation of nuclear substances still today win favour by their simplicity and legal elegance. It must, however, be said that on the points outlined above, the Convention needs to be brought up to date. The continued technological and economic development of the use of nuclear energy has raised new legal questions, and altered the terms of the old ones. Moreover, the magnitude of conceivable damage that can now be caused has increased. In 1960, the Paris Convention provides a progressive liability regime, which was in line with the technological and economic development of the day. Today, this is no longer the case in all respects.

To many, this may seem to be untrue, or perhaps merely exaggerated. It is, after all, the fact that very many States have already adopted the Convention, or the principles governing liability that are enshrined in it. If, however, a comparison is made of the provisions of the Convention with the nuclear liability law then in force in the Federal Republic of Germany (Sections 25 et seq. of the Atomic Energy Act of 1959) (15), it is apparent that the German legislation provides, in all but one of the points discussed here (16), better protection than the Paris Convention. To this extent, the German Atomic Energy Act may be considered superior to the Convention. Since Federal legislators must, and undoubtedly also intend, to maintain the achieved standards of protection afforded to persons suffering damage, the Federal Republic of Germany is, consequently, able to ratify the Paris Convention only with reservations. By applying to the full the reservations made by it at the time of signing the Convention, and by making use of the latitude accorded to the Contracting States, it is, in fact, possible to maintain the standards established by the Atomic Energy Act.

This may be considered the best available solution, on the grounds that the problems raised here are first and foremost problems

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(15) "Gesetz über die friedliche Verwendung der Kernenergie und den Schutzgegen ihre Gefahren (Atomgesetz)" [Act on the peaceful uses of atomic energy and protection against its hazards], of 23rd December 1959, as amended by the Act of 23rd June 1970 (Bundesgesetzblatt 1959 I, p. 814; 1970 I, p. 805).

(16) The inclusion of other sources of radiation as provided by Article 3 (c).

affecting the Germans, and do not justify a revision of the Paris Convention. Such an attitude would, however, surely be too complacent.

As a starting point, it may be assumed that all States have an interest in devising the best possible protection for their citizens in the matter of liability law. The amendments to treaty law put forward in this paper are intended to give rise to an improvement of the protection afforded to victims. It should also, however, be borne in mind that, if Germany ratifies the Convention only with certain reservations, then the harmonisation of nuclear liability law aimed for will not, for a major part of Western Europe, be achieved. An unwelcome disparity is thus created in the matter of liability law between the Contracting States. Even if an "up-dating" of the Paris Convention is not deemed to be absolutely necessary, international discussion of the question connected therewith is, nonetheless, urgently required.

BIBLIOGRAPHY

• *France*

Le désarmement nucléaire, by Marie-Françoise Furet. Edited by A Pedone Paris, 1973, 303 p.p.

The book under review examines the question of disarmament in particular of nuclear disarmament, in connection with the general problems of international relations and is divided into two parts The first part deals with the efforts undertaken to arrive at disarmament, such as the setting up of several committees, within and outside the United Nations and the obstacles met. The second part discusses the various agreements which have resulted from the disarmament efforts. These agreements are arranged in three groups. Agreements in the first group aim at control of nuclear weapons. The second group of agreements creates denuclearised territories and the third group concerns agreements on the limitation of nuclear weapons.

The author concludes that, in spite of the considerable efforts undertaken, the results have been rather limited and that nuclear disarmament, although perhaps possible just after the Second World War, no longer has a chance of being achieved today.

• *Germany*

Gottinger Atomrechtskatalog, Banden 22, 23 and 24 Compilation of references to nuclear treaties, laws and regulations in the USA Edited by the Institut fur Volkerrecht der Universitat Gottingen, Gottingen, 1972

Before describing the contents of these new volumes, it is recalled that since 1960, the Institut fur Volkerrecht der Universitat Gottingen has been publishing regularly the Gottingen Atomrechtskatalog, a compilation of the acquisitions made by the Institute's library which is specialised in documentation on nuclear energy.

This catalogue is divided into three parts part B is a systematic Bibliography of publications, part M deals with Materials and part L with Law, regulations and treaties.

This latter part which includes the above mentioned documents gives a complete list of references, in German, English and French, of the relevant treaties, laws and regulations in the nuclear field in a large number of countries, classified in alphabetical order except for Volume No. 6 which covers the International Organisations active in the nuclear field.

The three latest Volumes (22, 23 and 24) are devoted to the United States. Volumes concerning countries are usually divided into (1) Laws and regulations, (2) Bilateral treaties, (3) Multilateral treaties , however, to take account of the constitutional structure of the United States the following plan was adopted for Federal legislation (Volume 22)

(1) Laws and Regulations
(2) Executive Orders and Reorganization Plans
(3) Regulations of the Atomic Energy Commission
(4) Other Regulations
(5) Agreements of the Atomic Energy Commission with States
(6) Interstate Co-operation

Volumes 23 and 24 list the legislation adopted by various specific States and applicable to certain aspects of nuclear energy.

Proceedings of the International Conference on Nuclear Law "Nuclear Inter Jura 1973", published by Gesellschaft fur Kernforschung mbH, Kernforschungzentrum Karlsruhe, 1973, 513 p.p.

The Association Internationale du Droit Nucléaire (AIDN) which was created in 1971 and the Gesellschaft fur Kernforschung mbH Karlsruhe organised an International Conference on Nuclear Law at the Karlsruhe Nuclear Research Centre in September 1973. Over 150 participants from 21 different countries as well as representatives of IAEA, NEA and the European Communities took part in the Conference

The Proceedings of the Conference reproduce the original texts of the 26 papers presented as well as the conclusions of the Chairmen of the 5 Working Parties set up on this occasion. These Working Parties respectively dealt with the revision of the Paris Convention on Third Party Liability in the Field of Nuclear Energy, harmonisation of licensing criteria, including aspects of environmental protection, legal problems of nuclear shipping, legal problems arising out of the Non-Proliferation Treaty, as well as the causality principle of radiation damage with special reference to social insurance systems. Also reproduced are the speeches by Professor Fischerhof, Chairman of the Association and M. Hébert the Chairman elected at the close of the Conference as well as a lecture by Professor Hafele on the role of fully developed nuclear energy in the next decade.

Proceedings of the First German Nuclear Law Symposium (1972), by Professor Dr. Rudolf Lukes. Edited by Carl Heymans Verlag, Koln, 1973, 322 p.p.

These Proceedings which are in German, comprise the papers presented at the first German Nuclear Law Symposium (Erstes Deutsches Atomrechts-Symposium) which was held on 7th and 8th December 1972 in Munster, together with a summary of the discussions following the presentation of the papers. The Symposium, whose aim was to review questions of current interest in German nuclear law, covered a wide range of subjects. They included, among other things, new developments in German nuclear law, particularly in the field of licensing and third party liability, technical and legal aspects of the siting of nuclear installations and legal problems in connection with the refitting of already licensed nuclear installations. The Symposium also examined differences and similarities between the international third party liability conventions and the German provisions in this field.

Atomgesetz mit Verordnungen. The German Atomic Energy Act and Ordinances, by Professor Hans Fischerhof. Edited by Nomos Verlagsgesellschaft, Baden-Baden, 1973, 237 p.p.

This publication issued only in German contains the texts of the German Atomic Energy Act of 23rd December 1959 and of the most important Ordinances in the nuclear field in Germany, including the Nuclear Installations Ordinance, the First and Second Radiation Protection Ordinances, the X-ray Ordinance, the Financial Security Ordinance, the Ordinance concerning Costs under the Atomic Energy Act, the Food Irradiation Ordinance and the Ordinance on the Authorising of Medicaments treated with Ionizing Radiation or containing Radioactive Substances

• *Italy*

Il regime giuridico dell'impiego pacifico dell'energia nucleare. Edited by the Comitato Nazionale per l'Energia Nucleare, Rome, 1972, 297 p p.

This publication on the legal regime governing the peaceful applications of nuclear energy, reproduces in Italian the texts of the most important Acts and Decrees on nuclear activities in Italy. It is intended to facilitate the study of legal provisions in the nuclear field, particularly those covering nuclear safety, radiation protection, licensing procedures and third party liability.

• *United States*

The Safety of Nuclear Power Reactors (Light Water-Cooled) and Related Facilities. Wash-1250, published by the United States Atomic Energy Commission, July 1973

This report on the safety of nuclear power reactors (light water-cooled) and related facilities was prepared by the staff of the Atomic Energy Commission in response to a request of the Chairman of the Congressional Joint Committee on Atomic Energy. Although this is not a publication of a legal nature, it is of direct interest to persons working in nuclear law. In addition to information on the technical aspects of nuclear power reactor safety, the report gives detailed information on the basic philosophy for assuring the safety of such installations as well as on the present progress in the use of nuclear power in the United States. It also sets out the Government's authority and responsibility in the regulation of the safety of nuclear installations. The Regulations in force in this field, enacted by the Atomic Energy Commission, are also reproduced in this report.

• *IAEA*

Experience and Trends in Nuclear Law A selection of papers presented at the Seminar on the development of nuclear law in Bangkok and the Inter-regional training course on the legal aspects of nuclear energy in Athens. Edited by the IAEA, Vienna, 1972, 169 p.p.

The papers assembled in this publication cover a variety of subjects of interest in the field of nuclear law and are intended to reflect both experience in the development of nuclear legislation at a national level and trends in an international approach to legal issues raised by the expanding use of nuclear energy.

The book consists of five sections each representing an area of nuclear law. The first section deals with nuclear safety and environmental protection and furnishes information on the legal status and implementation of IAEA safety standards, the structure and responsibilities of the Spanish Junta de Energia Nuclear, and on recent developments in the field of radiation control and environmental protection in the United States. Section II reviews the international supply of nuclear materials and the procedures for supply of nuclear materials through IAEA. The third section covers the different aspects of nuclear third party liability and its implementation in OECD countries and the practical problems in nuclear insurance, while Section IV outlines the

conventions, agreements and legislation on nuclear ships Section V surveys the existing nuclear legislation in Asia and the Far East The papers are reproduced in their original languages.

Agreements registered with the International Atomic Energy Agency. Fifth Edition, published by the International Atomic Energy Agency, Vienna, 1973, 190 p.p.

This publication is divided into three parts. The first part lists chronologically all agreements registered with the Agency up to 31st December 1971; these agreements have been given registration numbers corresponding to the dates of their entry into force. The second part lists the agreements registered with the Agency between 1st January 1972 and 30th June 1973. The third part consists of a tabular presentation of the material contained in Part I, setting out the States having concluded these agreements. This presentation groups the agreements under a number of main headings, also giving the relevant Agency registration number. The registration of agreements is undertaken pursuant to Article XXII.B. of the Agency's Statute. This Article provides that agreements between the Agency and any member and agreements between the Agency and any organisation shall be registered with the Agency. In accordance with the Agency's Regulations for the Registration of Agreements the Director General must inform the Member States and the Secretary General of the United Nations of all agreements registered with the Agency. This publication is intended to comply with this requirement.

• *WHO*

Protection against ionizing radiation. Survey of laws and regulations in force, published by WHO, 1972, 353 p.p.

This study analyses legislation and regulations applicable in a certain number of countries and follows and updates the study published in 1964 by the World Health Organisation.

This survey of legislation on protection against ionizing radiation was prepared from documents available to the Headquarters of the World Health Organisation as at the end of November 1971 for each of the countries concerned. As for previous studies the aim is to provide characteristic examples of the form of such legislation, and not to provide a comprehensive review of world legislation in this field

The analyses of national laws are supplemented by a list of bibliographic references as well as legal texts mentioned therein The Study covers the following countries

Australia	Netherlands
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It should be recalled on this occasion that the World Health Organisation publishes each quarter two separate English and French editions of an International Digest of Health Legislation which provides the texts or summaries of health laws and regulations, also in the radiation protection field.

Some other publications of NEA

ACTIVITY REPORTS

Reports on the Activities of the European Nuclear Energy Agency (ENEA) /On the adhesion of Japan to the Agency on 20th April 1972, its name was changed to the OECD Nuclear Energy Agency (NEA)/	Twelfth Report (November 1970) 119 pages (crown 4to) Thirteenth Report (December 1971) 90 pages (crown 4to) First Activity Report of NEA 85 pages (crown 4to)

Free on request

Annual Reports of the OECD High Temperature Reactor Project (DRAGON)	Twelfth Report (1970-1971) 140 pages (crown 4to) Thirteenth Report (1971-1972) 152 pages (crown 4to) Fourteenth Report (1972-1973) 112 pages (crown 4to)

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Activity Reports of the European Company for the Chemical Processing of Irradiated Fuel (EUROCHEMIC)	1968 Activity Report 63 pages (crown 4to) 1969 Activity Report 80 pages (crown 4to)

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Physics Measurements in Operating Power Reactors	Rome Seminar, May 1966 848 pages (crown 4to) £ 6.14s., $ 22, F 92, FS 84 DM 76.50
Radiation Dose Measurements (Their purpose, interpretation and required accuracy in radiological protection)	Stockholm Symposium, June 1967 597 pages (crown 4to) 64s., $ 11, F 44, FS 44, DM 36.50
Technology of Integrated Primary Circuits for Power Reactors	Paris Symposium, May 1968 F 25 (available on application to NEA)
Application of On-Line Computers to Nuclear Reactors	Sandefjord Seminar, September 1968 900 pages (crown 4to) £ 7.5s., $ 20, F 85, FS 78, DM 70
Third Party Liability and Insurance in the Field of Maritime Carriage of Nuclear Substances	Monaco Symposium, October 1968 529 pages (crown 8vo) £ 2.12s., $ 7.50, F 34, FS 28.50, DM 22.50
The Physics Problems of Reactor Shielding	Specialist Meeting, Paris, December 1970 175 pages £ 1.75, $ 5, F 23, FS 20, DM 15.60
Magnetohydrodynamic Electrical Power Generation Fifth International Conference	Munich, April 1971 499 pages £ 4.88, $ 14, F 65, FS 50, DM 43
Marine Radioecology	Proceedings of the Hamburg Seminar September 1971 213 pages £ 1.50, $ 4.50, F 20, FS 15.60, DM 13.60
Disposal of Radioactive Waste	Proceedings of the Information Meeting Paris, 12th-14th April 1972
Power from Radioisotopes	Proceedings of the Second International Symposium, Madrid, 29th May - 1st June £ 9, $ 24, F 110, FS 83.50, DM 68.80

The Management of Radioactive Wastes from Fuel Reprocessing	Proceedings of the Paris Symposium 27th November-1st December 1972 £ 12, $ 34, F 140, FS 107, DM 88

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Uranium - Production and Short Term Demand	January 1969 29 pages (crown 4to) 7s., $ 1, F 4, FS 4, DM 3.30
Uranium - Resources, Production and Demand	September 1970 54 pages (crown 4to) £ 1, $ 3, F 13, FS 11.50, DM 9 10
Uranium - Resources, Production and Demand	August 1973 140 pages (crown 4to) £ 1.76, $ 5, F 20, FS 15.60, DM 12.50
Water Cooled Reactor Safety	May 1970 179 pages (crown 4to) £ 1.52, $ 4.50, F 20, FS 17.50, DM 13.60

Basic Approach for Safety Analysis and Control of Products Containing Radionuclides and Available to the General Public	June 1970 31 pages (crown 8vo) 11s., $ 1.50, F 7, FS 6, DM 4.90
Glossary of Terms and Symbols in Thermionic Conversion	1971 112 pages (crown 4to) £ 1.75, $ 5, F 23, FS 20, DM 15.60
Radioactive Waste Management Practices in Western Europe	1972 126 pages (crown 8vo) £ 1.15, $ 3.25, F 15, FS 11.70, DM 10.50
Radiation Protection Standards for Gaseous Tritium Light Devices	1973 23 pages (crown 8vo) free on request

LEGAL PUBLICATIONS

Convention on Third Party Liability in the Field of Nuclear Energy	July 1960, incorporating provisions of Additional Protocol of January 1964 73 pages (crown 4to) Free on request
Nuclear Legislation, Analytical Study : "Nuclear Third Party Liability"	1967 78 pages (crown 8vo) 14s., $ 2.30, F 9, DM 7.50
Nuclear Legislation, Analytical Study "Organisation and General Regime Governing Nuclear Activities"	1969 230 pages (crown 8vo) £ 2, $ 6, F 24, FS 24, DM 20
Nuclear Legislation, Analytical Study : "Regulations Governing Nuclear Installation and Radiation Protection"	1972 492 pages (crown 8vo) £ 3.70, $ 11, F 45, FS 34.60, DM 29.80
Nuclear Law Bulletin	Annual Subscription Two issues and supplements £ 1,80, F 18, $ 4,50

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G E R M A N Y

ORDINANCE CONCERNING PROTECTION FROM DAMAGE BY X-RAYS*
(X-RAY ORDINANCE)

1st March, 1973
(Bundesgesetsblatt 1973, I, p. 175)

PART I

GENERAL PROVISIONS

Section 1. Field of application

(1) This Ordinance applies to X-ray installations and incidental sources of radiation, where X-rays of a threshold energy of not less than 5 keV can be produced by accelerating electrons, and where the electrons cannot be accelerated to an energy greater than 3 MeV.

(2) This Ordinance does not apply to the operation of X-ray apparatus in connection with education in schools, insofar as the schools come under the Second Radiation Protection Ordinance of 18th July, 1964 (Bundesgesetzblatt I, p. 500), as amended by the Second Ordinance amending and supplementing the First Radiation Protection Ordinance of 12th August, 1965 (Bundesgesetzblatt I, p. 759).

Section 2. Definitions

For the purposes of this Ordinance:

1. Occupationally exposed persons means: persons who are normally in a controlled area as a consequence of their employment;

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* Unofficial translation prepared by the Secretariat.

2. X-ray installation means: equipment, apparatus or appliances which are operated for the purpose of generating X-rays;

3. X-ray generator means: an X-ray tube and the protective housing of the tube and, in the case of an "all-in-one" unit, the high voltage generator;

4. incidental radiation source means: equipment, apparatus, or appliances in which X-rays are generated, but which are not operated for this purpose;

5. X-ray diagnosis means: fluoroscopy, X-ray photography or other diagnostic methods using X-rays;

6. fluoroscopy means: the irradiation by means of X-rays of a living being, human or animal, or of an object, in order to make its state, condition or functions directly visible;

7. X-ray photography means: the presentation of a living being, human or animal, or of an object by means of X-rays in order to make its state, condition or functions visible for observation at a later time;

8. X-ray treatment means: the irradiation of a living being, human or animal, or of an object in order to affect its state, condition, or functions.

PART II

CONDITIONS FOR USE

OBLIGATION TO HAVE AN AUTHORISATION

Section 3. Authorisation to operate X-ray installations

(1) Any person operating an X-ray installation must have an authorisation from the responsible authority.

(2) An authorisation shall be granted:

1. if nothing is known which could throw doubt on the reliability of those responsible for radiation protection;

2. if those responsible for controlling or supervising the proposed operation of the X-ray installation have the specialised skills required for radiation protection and if these responsible personnel are available in sufficient numbers for the safe operation of the X-ray installation;

3. if it is ensured that other personnel involved in the proposed operation of the X-ray installation have the necessary knowledge of the possible hazards of radiation and of the protective measures to be taken; and

4. if it is ensured that, in the proposed operation of the X-ray installation, such devices are made available and measures taken as are necessary, in the light of present levels of knowledge and technology, to provide adequate protection of individuals and the public in general against radiation damage to life, health and property.

(3) Sub-sections 1 and 2 shall apply accordingly if the X-ray installation or its operation is substantially modified. Any modification that may affect radiation protection shall be regarded as substantial.

Section 4. Operation of X-ray installations without authorisation

(1) A person operating an X-ray installation, the X-ray generator in which is of an approved design in accordance with Section 7(2), does not require an authorisation as laid down in Section 3, provided that the conditions set out in Section 3(2), paragraphs 2 and 3 are satisfied and that before the X-ray installation is first commissioned a specialist appointed by the responsible authority has inspected it and issued a certificate:

1. describing the X-ray installation and its proposed operation, and

2. stating that (a) the X-ray generator is of an approved design, and (b) that such devices are made available and measures taken as are necessary to provide adequate protection against radiation damage to life, health and property.

Should the specialist decline to issue the certificate, a decision will be taken, on request, by the responsible authority.

(2) For X-ray installations referred to in sub-section 1 operated for medical, dental or veterinary purposes, evidence of the specialised skills required for radiation protection on the part of the doctors, dentists or veterinarians responsible for the control or supervision of the proposed operation shall take the form of the production of a certificate issued by the authority competent under the law of the Land and proving that the person in question has attended a course on radiation protection in connection with X-ray applications. This certificate shall not be required of medical practitioners, dentists or veterinary surgeons who can show that they have obtained:

1. the doctor's degree based on Sections 4 or 6 of the Ordinance on the qualification of medical practitioners of 28th October, 1970 (Bundesgesetzblatt I, p. 1458) or

2. the dentist's degree based on the Ordinance on the qualification of dentists referred to in Section 48 of this Ordinance, or

3. the veterinary surgeon's degree based on Sections 2 or 6 of the Ordinance concerning the qualification of veterinarians dated 23rd March, 1967 (Bundesgesetzblatt I, p. 360).

(3) Any person proposing to operate the X-ray installation referred to in sub-section 1 shall so notify the responsible authority at least two weeks before putting it into operation. This notification shall be

accompanied by evidence that the conditions set out in Section 3, sub-sections 2 and 3 are fulfilled. A copy of the specialist's certificate referred to in sub-section 1 and of the design approval shall also be joined to the notification.

(4) Sub-sections 1 to 3 shall similarly apply if the X-ray installation or its operation is substantially modified. Any modification which may affect radiation protection is to be regarded as substantial.

(5) A person operating an apparatus which is highly or completely protected within the meaning of Sections 2 and 3 of Appendix II*, shall not require the authorisation referred to in Section 3, if the highly or completely protected apparatus is of an approved design and if the persons responsible for controlling or supervising the operation of the highly protected apparatus have the specialised skills required for radiation protection. The responsible authority shall be notified at least two weeks before the highly or completely protected apparatus is put into operation. To the notification shall be joined a copy of the authorisation and, in the case of highly protected apparatus, the name and address of the person responsible for controlling or supervising the operation of the highly protected apparatus.

(6) The responsible authority may prohibit the operation of X-ray installations not requiring authorisation under sub-sections 1, 4 or 5 if anything is known which could throw doubt on the reliability of any one of the persons responsible for radiation protection or if it should appear that one of these responsible persons has not or no longer has the specialised skills required for radiation protection.

Section 5. Operation of incidental radiation sources

(1) Any person operating an incidental source of radiation requires authorisation from the appropriate authority. Section 3(2) shall apply accordingly.

(2) Any person operating an incidental source of radiation where the voltage used for electron acceleration does not exceed 20 kV, shall not require the authorisation referred to in sub-section 1, provided that:

1. the local dose rate at a distance of 5 centimetres from the surface does not exceed 36 picoamperes per kilogramme (pA/kg) (0.5 milliroentgen per hour), and

2. sufficiently clear indication is given on the radiation source that:

   (a) X-rays are generated, and

   (b) the voltage for electron acceleration must not exceed the maximum value shown.

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* As the Appendices of this Ordinance are mainly of a technical nature, they are not reproduced in the Bulletin.

(3) Any person operating an incidental source of radiation where the voltage used for electron acceleration exceeds 20 kV, shall not require the authorisation referred to in sub-section 1, provided that:

1. the design of the radiation source is of an approved type, and

2. sufficiently clear indication is given on the radiation source that:

   (a) X-rays are generated,

   (b) a system (to be described) ensures that the highest local dose rate allowed for the approved design is not exceeded, and

   (c) the voltage used for electron acceleration must not exceed the maximum value - which shall also be indicated.

(4) The manufacturer or importer shall supply incidental radiation sources for use without an authorisation to other persons only if they are designed in accordance with the conditions set out in sub-sections 2 or 3. Incidental radiation sources requiring authorisation shall be supplied by the manufacturer or importer only if the source bears a clearly visible indication that authorisation is required.

Section 6. Maintenance and repair of X-ray installations and incidental radiation sources

(1) Any person whose trade is the maintenance and repair of X-ray installations or incidental radiation sources shall so notify the responsible authority in writing forthwith. Sections 3 to 5 shall not apply to the operation of X-ray installations or incidental radiation sources for purposes of repair and maintenance.

(2) The responsible authority may prohibit maintenance or repair:

1. if the persons controlling or supervising maintenance or repair are unreliable or do not have the specialised skills required for radiation protection, or

2. if the necessary radiation protection is not ensured during maintenance or repair.

DESIGN APPROVAL

Section 7. Design approval

(1) On application by the manufacturer or importer, the Physikalisch-Technische Bundesanstalt (Federal Physics and Technology Institute) shall verify:

1. X-ray generators for compliance with the provisions of Appendix I* or of Appendix II, Section 1 ;

2. highly protected apparatus for compliance with the provisions of Appendix II, Section 2 ;

3. completely protected apparatus for compliance with the provisions of Appendix II, Section 3 ;

4. incidental radiation sources for compliance with the provisions of Appendix II, Section 4 .

The application shall be accompanied by the drawings necessary for the verification and by a description of the design and method of operation. If requested, a specimen necessary for the verification shall be supplied to the Physikalisch-Technische Bundesanstalt. The Physikalisch-Technische Bundesanstalt shall notify the result of its verification to the responsible authority.

(2) The responsible authority shall decide, on application, whether to approve an X-ray generator, highly or completely protected apparatus, or incidental radiation source which has been verified in accordance with sub-section 1. Approval shall be granted if the X-ray generator, highly or completely protected apparatus, or incidental radiation source complies with the provisions referred to in sub-section 1. If this is not so approval shall not be granted.

Section 8

(1) Approval shall be granted on condition that the person to whom it is granted:

1. (a) verifies each approved X-ray generator, highly or completely protected apparatus, or each incidental radiation source for compliance with the essential radiation protection characteristics given in the design approval, and ensures that the manufacture and individual verification of each installation is supervised by one of the specialists appointed by the responsible authority;

   (b) provides the approved X-ray generator, highly or completely protected apparatus, or incidental radiation source with characteristics and data specified by the responsible authority;

2. delivers to the purchaser of an X-ray generator, highly or completely protected apparatus, or incidental radiation source, two copies of the approval certificate and indicates on them the result of the individual verification referred to in sub-section 1(a); and

3. supplies with the approved X-ray generator, highly or completely protected apparatus or incidental radiation source, a set of instructions for operation with special reference to the steps taken for radiation protection.

(2) Approvals of X-ray generators, highly or completely protected apparatus or incidental radiation sources shall remain valid for a maximum of ten years. On application, approvals may be renewed, any number of times, for a like period. X-ray installations and incidental radiation sources which are offered for sale prior to the expiry of the approval period may continue to be operated under the provisions of Sections 4 and 5 unless the responsible authority establishes that adequate protection against radiation damage is not ensured.

Section 9. Approval certificate

If the design is approved in accordance with Section 7(2), the approving authority shall issue an approval certificate which shall state:

1. the essential radiation protection characteristics for the X-ray generator and additionally, in the case of highly and completely protected apparatus and incidental radiation sources, the identification of the systems providing the radiation protection;

2. limitations, instructions, conditions and time limits; and

3. the characteristics and data with which the X-ray generator, highly or completely protected apparatus, or incidental radiation source is to be provided or marked.

Section 10. Publication in Bundesanzeiger (Official Journal)

The grant, suspension and renewal of design approvals and the findings of the responsible authority in accordance with Section 8(2), third sentence, shall be published in the Bundesanzeiger.

PART III

PROVISIONS REGARDING USE

GENERAL PROVISIONS

Section 11. Responsibility for radiation protection

(1) Responsibility for radiation protection shall lie with:

1. any person operating an X-ray installation or an incidental radiation source requiring authorisation;

2. those appointed by such a person to be responsible for controlling or supervising the operation of the X-ray installation or of the incidental radiation source requiring authorisation. The responsible authority shall be notified immediately of their appointment, with details of their competence within

the enterprise, and of their dismissal; to the appointment notifications shall be joined evidence of the necessary specialised skill. A copy of the notification shall be given to the responsible person.

(2) The duties of the persons referred to in sub-section 1, paragraph 2, under these regulations are confined to their competence within the enterprise. They shall immediately report all defects in radiation protection to the person operating the X-ray installation or incidental radiation source requiring authorisation.

(3) Should the competence in the enterprise of any of the persons referred to in sub-section 1, paragraph 2, be inadequate, especially as regards the taking of immediate steps to avert danger, then the responsible authority shall rule that for the purposes of this Ordinance, such a person may not be regarded as responsible for radiation protection.

Section 12. General protective measures

For the purpose of providing protection against radiation damage to life, health and property, those responsible for radiation protection shall ensure, by means of appropriate protective measures, and in particular by providing suitable premises, protective arrangements, equipment and personal protective gear and instituting suitable operating control procedures, and by providing sufficient and suitable staff, that, in the operation of the X-ray installation or incidental radiation source requiring authorisation:

1. the protection provisions set out in Sections 13 to 35 and 39 to 41 are complied with; and

2. the radiation doses received by individuals or the public in general are kept to a minimum and in any case below the levels indicated in Sections 32 to 34.

Section 13. Measurement of the dose rate from X-ray installations operated for therapeutic purposes

(1) If an X-ray installation is used for medical treatment, then without prejudice to Section 4(1), paragraph 2(b), the dose rate shall be measured in normal conditions of use when the X-ray installation is installed or when modifications are made which could affect the intensity of the working beam produced and the findings shall be recorded. Measurement shall be made at least every six months to check that the dose rate in the working beam still agrees with the recorded figure; the result of such tests shall be recorded. The measurements referred to in the first and second sentences are unnecessary if the dose rate is monitored continually during operation.

(2) Measurements in accordance with sub-section 1 shall be made with a dosemeter connected directly to a measuring instrument specified by the Physikalisch-Teknische Institut or an equivalent instrument approved by the responsible authority. Such measurements shall be repeated whenever the dosemeter has been the subject of any action that may affect the accuracy of the reading, and in any case at least every two years. The results of initial and repeated measurements shall be recorded.

(3) These records shall be kept available for inspection. They shall be retained for thirty years and produced to the responsible authority on request. When the X-ray installation is taken out of service they shall be transferred to the responsible authority.

Section 14. Further duties of persons operating an X-ray installation or an incidental radiation source

(1) A person operating an X-ray installation shall in addition:

1. have available where the X-ray installation is located a copy of the authorisation document (Section 3) or, in cases where design approval is granted under Section 7(2), a copy of the approval certificate (Section 9) and the instructions for operation /Section 8(1), paragraph 3/; and

2. have a copy of this Ordinance available or displayed for inspection.

(2) Any person operating an X-ray installation or an incidental radiation source of an approved design under Section 7(2), shall cease operating it if the suspension of the approval or a ruling of the authority under Section 8(2), third sentence is published in the Bundesanzeiger, or if the X-ray installation or incidental radiation source ceases to match the characteristics set out in the approval certificate.

Section 15. Controlled and supervised areas

(1) Any area within which persons may receive a dose equivalent exceeding 15 millijoule per kilogramme (mJ/kg) (1.5 rem) in a year (controlled area) shall be marked off. During the time, the installation is energised, this area shall be identified. On this identification at least the words "no entry - X-rays" shall be clearly visible; it must also be displayed whilst the installation is being made ready.

(2) The area adjoining a controlled area, within which persons may receive a dose equivalent exceeding 1.5 mJ/kg (0.15 rem) in a year (supervised area) shall be defined and monitored in accordance with Section 39.

(3) Local doses arising from other radiation sources shall be taken into account when establishing the limits of the controlled and supervised areas.

(4) The responsible authority may rule that other areas are to be considered as controlled or supervised areas if this is necessary for the protection of individuals or of the public in general.

(5) The areas referred to in sub-sections 1, 2 and 4 constitute controlled or supervised areas only when the installation is energised.

Section 16. X-ray rooms

(1) An X-ray installation may only be operated in the totally enclosed room (X-ray room) specified in the authorisation or specialist's certificate.

(2) Sub-section 1 notwithstanding, an X-ray installation may be operated for diagnosis outside the X-ray room, if the condition of the person or animal concerned or the latter's size so dictates. X-ray diagnosis shall be carried out in such a manner that the working beam cannot impinge upon any person or animal other than those under diagnosis.

(3) Sub-section 1 shall not apply to X-ray installations:

1. for mass X-ray examinations;

2. for technical purposes, as described in the provisions of Appendix II, Section 2 (highly protected equipment) or Section 3 (fully protected equipment); and

3. in other cases:

   (a) if it is expressly stated in the authorisation that the X-ray installation is intended for operation outside an X-ray room, or

   (b) if the responsible authority gives permission for the operation of the X-ray installation outside an X-ray room,

and if it is absolutely essential in a particular case for the X-ray installation to be operated outside an X-ray room.

Section 17. Special provisions for controlled and supervised areas

(1) Permanent installations whose purpose is to protect persons exposed to X-rays at work, in particular by screening or keeping them at a distance, shall be so designed that the dose equivalent absorbed from an X-ray installation or an incidental radiation source cannot exceed an average of 1 mJ/kg (0.1 rem) in a week.

(2) No work station, passages or changing room shall be located within the controlled area of X-ray installations operated in an X-ray room. This does not apply to the work-stations necessary solely for the manning the installation, and which, for reasons bound up with the proper use of the X-rays, cannot be located outside the controlled area.

(3) Rooms other than the X-ray room and rooms outside the controlled area in which there may be radiation due to the operation of an X-ray installation or of an incidental radiation source requiring authorisation, shall be so constructed that persons cannot receive a dose equivalent exceeding 5 mJ/kg (0.5 rem) in a year.

(4) Sub-sections 2 and 3 do not apply to rooms in which it is ensured that there is no-one during the time that the installation is energised.

(5) In areas where persons live or stay continuously without being employed in connection with the operation of an X-ray installation or a source of incidental radiation, it shall be ensured that persons cannot receive a dose equivalent greater than 1.5 mJ/kg (0.15 rem) in a year.

Section 18. Presence in controlled areas

(1) During X-ray diagnosis of human beings, only the following persons, apart from the person under diagnosis, may remain within the controlled area to the extent that this is necessary for performing the X-ray diagnosis:

1. the doctors or dentists engaged in the X-ray diagnosis;
2. persons engaged in the X-ray diagnosis who are not doctors or dentists but are qualified to do medical or dental work;
3. persons defined in Section 20(1), paragraphs 3 and 4;
4. other persons whose presence is necessary for the continuing operation of the installation (e.g. physicists);
5. other persons, whose presence is necessary, under the supervision of the persons referred to in paragraph 1 above, for training, further training, or advanced training purposes or for the acquisition of knowledge regarding radiation protection;
6. other persons whose presence is strictly necessary for purposes of the X-ray diagnosis, under the direct supervision of one of the persons defined in paragraph 1 above.

(2) During X-ray therapy on live human beings, apart from the person being treated only those whose presence is strictly necessary for performing the limited X-ray therapy shall remain in the controlled area.

(3) During the X-ray diagnosis of animals, only the follwing persons shall remain in the controlled area, to the extent that this is necessary for the purposes of the X-ray diagnosis:

1. persons qualified to practise as veterinarians;
2. persons qualified to practise as doctors or dentists;
3. the persons referred to in Section 30(2);
4. assistants employed, under supervision of the persons referred to in paragraphs 1 to 3 above, provided they have the necessary radiation protection knowledge for this application;
5. other persons, whose presence is necessary, under the supervision of the persons referred to in paragraphs 1 to 3 above, for training, further training or advanced training purposes or for the acquisition of knowledge regarding radiation protection;
6. other persons whose presence is strictly necessary for purposes of the X-ray diagnosis, under the direct supervision of one of the persons defined in paragraph 1 above.

(4) During X-ray treatment of animals, no person shall remain in the controlled area.

(5) If the X-rays are used in cases other than those referred to in sub-sections 1 to 4, only persons qualified in accordance with Section 31 and, under their supervision, assistants, shall remain in the controlled area to the extent that this is necessary with regard to the operation of the installation.

(6) Persons possessing the necessary knowledge of radiation protection may be in the controlled area for the purpose of carrying out measurements and tests on the X-ray installation or incidental radiation source requiring authorisation.

(7) Persons may be in the controlled area of incidental radiation sources requiring authorisation only if their presence is necessary for the operation of the installation or for training purposes.

(8) The responsible authority may allow those responsible for radiation protection during X-ray diagnosis, or during the operation of an incidental radiation source requiring authorisation, to admit other persons to a controlled area.

(9) Persons under 18 years of age may not be employed in a controlled area. Pregnant women shall not be allowed in a controlled area, except for purposes of diagnosis or therapy.

Section 19. Protective clothing

All persons in a controlled area shall wear clothing giving adequate protection against X-rays where adequate protection is not provided by permanent devices in accordance with Section 17(1). This does not apply to the person under diagnosis or therapy.

THE USE OF X-RAYS ON LIVE HUMAN BEINGS

Section 20. Persons authorised to use X-rays

(1) Only the following persons may use X-rays on live human beings in the practice of their profession:

1. persons qualified to practise medicine or dentistry;
2. persons other than those referred to in 1 above, if they are qualified to do medical or dental work and have proved they have the necessary radiation protection knowledge for this application in an examination set by the responsible authority;
3. persons qualified as one of the following: medical radiographer or technical medical assistant;
4. assistants acting under the continuous supervision and responsibility of one of the persons referred to in 1 above, provided that they have the necessary radiation protection knowledge for this activity.

(2) In addition to the persons referred to in sub-section 1, assistants employed under the supervision of and responsible to one of the persons referred to in sub-section 1, paragraph 1, may use X-ray installations for mass X-ray examinations, provided that they have the necessary radiation protection knowledge for this activity.

Section 21. Limitations on the use of X-rays

(1) X-rays may be used on human beings only in medical and dental practice or in such other cases as the law provides or permits.

(2) The decision on whether and how X-rays are to be used for diagnosis or therapy on human beings shall be taken only by a qualified medical practitioner, or, insofar as the X-rays are to be used for dental purposes, a qualified dental practitioner.

(3) Apart from the purposes set out in sub-section 1, X-rays may be used on human beings only after special approval valid for a specific time has been given by the responsible authority. The approval shall be refused if the applicant fails to show that protection is ensured against radiation damage to life and health, and to the gonads in particular, and that the provisions of this Ordinance in connection with the use of X-rays in medical practice are observed.

Section 22. General principles in relation to the use of X-rays on live human beings

In medical or dental practice X-rays shall be used on live human beings in conformity with scientific and technical knowledge, only if necessary in accordance with the principles of good practice in medicine or dentistry. The use of X-rays shall be such that the radiation dose to the person under diagnosis or therapy is kept as low as possible. In X-ray diagnosis X-ray photography shall be preferred to fluoroscopy. There shall be no departure from the provisions of Sections 23 to 25, 27(1) and (2) and Section 28 except on imperative medical grounds.

Section 23. Protection of the gonads and of the embryo

(1) X-ray diagnosis of persons who are not permanently unable to procreate or bear children shall be carried out in such a manner that the gonads are not subjected to direct radiation, provided that this does not affect the clarity of the diagnosis.

(2) In the case of women of child-bearing age, X-ray diagnosis of the pelvic region shall not be carried out unless pregnancy is unlikely.

Section 24. General principles in relation to fluoroscopy

(1) Fluoroscopy shall not take place until the eyes of the fluoroscopist are fully adapted to obscurity, unless electronic amplification equipment is used. The X-rayed area shall be restricted to the area to be examined.

(2) For fluoroscopy with non-stationary apparatus electronic amplification shall be used. The X-ray apparatus shall be switched on only for purposes of fluoroscopy or photography.

Section 25. General principles for X-ray diagnosis of the head and limbs

(1) For all X-ray examinations in the region of the head with the working beam directed towards the body, and or X-ray photography of the teeth or jaws a protective screen of at least 0.4mm of lead equivalent is to be positioned so as to protect the remainder of the body from radiation.

(2) During any examination of the limbs where there is a risk of radiation reaching parts of the trunk, the patient shall be provided with a device of at least 0.4 mm lead equivalent to protect the trunk against X-ray irradiation.

Section 26. General principles for X-ray treatment

(1) For X-ray treatment on human beings, the course of radiation treatment shall be set out in writing, together with particulars of how it is to be applied, before the treatment is commenced, and shall be under the control of a person qualified to practise medicine or dentistry. The treatment plan shall give all necessary details concerning the X-ray treatment, and in particular dose, exposure time and schedule, skin and target dosages, locations and limits of the radiation field, choice of filter, tube current, tube voltage and focal spot skin distance, and details of the protection against scattered radiation.

(2) The position of the radiation field and compliance with the other requirements referred to in sub-section 1 shall be verified by a person qualified to practise medicine or dentistry, before each individual treatment of a person is commenced.

Section 27. Use of X-rays in cases of pregnancy

(1) In the case of pregnancy no X-ray diagnosis or therapy shall be carried out.

(2) Where X-ray diagnosis is imperative for medical reasons during pregnancy, every endeavour shall be made to reduce the dose of radiation, in particular by limiting the number of X-ray photographs and by using the shortest possible exposure times and the smallest possible X-ray beam, in order to protect the embryo.

(3) The dose equivalent to the embryo during the first two months of pregnancy must not exceed 10 mJ/kg (1 rem). This dose shall be exceeded only when shown to be absolutely vital.

Section 28. Use of X-rays on babies, children and adolescents

(1) In the case of babies, children and adolescents, age, weight and surface area shall be taken into account in determining the physical characteristics of the X-ray beam and of the dose.

(2) In X-ray therapy on babies, children or adolescents, the gonads, bone-marrow, dental system, bone growth areas and glands and gland systems shall be protected from direct exposure to the X-ray beam.

(3) During X-ray diagnosis on babies, children and adolescents, the X-ray beam is to be focused only on the immediate object of the examination. In fluoroscopy and X-ray photography (including photofluorography of the chest), the pelvis shall be excluded from the X-ray beams. The gonads shall be shielded from the X-rays.

Section 29. Records

(1) Prior to any X-ray examination or X-ray treatment, enquiries shall first be made concerning any previous use of ionizing radiation. With regard to mass X-ray examinations, it is sufficient to ask the patient the date of his or her last chest X-ray. Women of child-bearing age shall also be asked whether they are pregnant. The information referred to in the above three sentences shall be recorded.

(2) A record shall be kept of X-ray examination or treatment. The record of an X-ray examination shall show the date, the type of examination, the area examined and the particulars from which the radiation dose may be derived, including the number of plates and data relating to current and voltage together with exposure times of fluoroscopy. Records of X-ray treatment must, in addition, show all necessary data concerning the X-ray treatment, and in particular the determination of the dose rate, exposure time and schedule, surface and depth dose, position and limits of the radiation field, choice of filter, X-ray tube current and voltage and the skin-focal spot distance, together with the nature of the protection from scattered radiation.

(3) On request, the person to be examined or treated shall be given a copy of the record referred to in sub-section 2.

(4) Any person operating an X-ray installation in the practice of medicine or dentistry shall retain these records for a period of thirty years after the last treatment in the case of X-ray therapy, and for a period of ten years from the last examination in the case of X-ray diagnosis. The responsible authority may require, where a practice is discontinued, that the records shall be transferred to a place designated by the authority; the necessary steps shall be taken to preserve medical secrecy.

(5) Any person who has examined or treated another person by means of X-rays or other ionizing radiations, shall give to those persons who undertake any subsequent X-ray examination or treatment on their request, the information in the records referred to in sub-sections 1 and 2, and must transmit provisionally the relative file to them. If the file is kept by another person, this person must hand over this file to them provisionally.

USE OF X-RAYS IN OTHER CASES

Section 30. Use of X-rays on animals

(1) Only the following persons shall use X-rays on animals:

1. persons authorised to practise as veterinary surgeons;
2. persons qualified to practise medicine or dentistry;
3. assistants working under the supervision of the persons referred to in 1 and 2 above, provided that they have the necessary knowledge of radiation protection.

(2) Other persons shall use X-rays on animals only if they have the authorisation of the competent authority, provided they have shown that they have necessary radiation protection knowledge for such use.

(3) The use of X-rays on animals in no way affects the regulations regarding animal protection.

Section 31. Persons authorised to use X-rays in any other cases

In cases other than their use on living human beings or animals, X-rays shall be used only by such persons as possess the necessary radiation protection knowledge.

PROVISIONS REGARDING RADIATION EXPOSURE

Section 32. Maximum permissible doses for occupationally exposed persons

(1) The dose equivalent absorbed by an occupationally exposed person from an X-ray installation or from an incidental radiation source requiring authorisation, must not exceed the permissible values given in subsections 2 to 6 below.

(2) The dose equivalent absorbed up to a given age must not exceed 50 mJ/kg (5 rem) multiplied by the number of years of age minus 18 (maximum permissible dose in relation to age).

(3) The total dose equivalent during a period of 13 successive weeks must not exceed 30 mJ/kg (3 rem), nor must it exceed 50 mJ/kg (5 rem) in a year.

(4) If the dose equivalent absorbed as a consequence of the operation of an X-ray installation or of an incidental radiation source requiring authorisation is known, then the dose equivalent received, distributed over each period of 13 successive weeks may be as much as 30 mJ/kg (3 rem) for each such period until the maximum dose in relation to age is reached.

(5) In the case of a female occupationally exposed person and whose child-bearing ability is not permanently excluded, the dose equivalent received in any period of 13 successive weeks shall not exceed 15 mJ/kg (1.5 rem).

(6) If an occupationally exposed person has received a dose equivalent exceeding 30 mJ/kg (3 rem) but not more than 250 mJ/kg (25 rem) as a result of an accidental and exceptional exposure to radiation, this accidental exceptional radiation dose is to be taken into account in the accumulated dose equivalent in determining whether the maximum permissible dose in relation to age has been reached. If the value determined exceeds the maximum permissible dose in relation to age, no account is taken of the extent to which it does so; this is permissible once only during the lifetime of any person.

Section 33. Maximum permissible doses in respect of exposure of parts of the body of occupationally exposed persons

(1) The dose equivalent during any 13 consecutive weeks to the hands, forearms, feet and ankles of an occupationally exposed person may amount to 150 mJ/kg (15 rem) with a maximum of 600 mJ/kg (60 rem) in a year, provided the permissible values given in Section 32 for the other parts and organs of the body are not exceeded.

(2) If an occupationally exposed person has received a dose equivalent exceeding 150 mJ/kg (15 rem) but not more than 600 mJ/kg (60 rem), the amount by which it exceeds 150 mJ/kg (15 rem) may be disregarded once during the lifetime of this person. The competent authority, having taken medical advice, may allow the exceeding of this dose to be disregarded more than once, provided that there is no fear that the health of the person concerned is endangered.

Section 34. Maximum permissible doses to other persons

(1) The dose equivalent set out in sub-sections 2 to 4 shall not be exceeded in the case of non occupationally exposed persons.

(2) In the case of a person who stays in a controlled area from time to time in the course of his employment, though not engaged in the use of X-rays or of an incidental radiation source requiring authorisation, the dose equivalent in one year shall not exceed 15 mJ/kg (1.5 rem).

(3) In the case of a person staying in a controlled area, not in the course of his or her employment but for training purposes, the dose equivalent absorbed in one year shall not exceed 5 mJ/kg (0.5 rem) before the completion of his or her 18th year, or 15 mJ/kg (1.5 rem) thereafter.

(4) In the case of a person staying in a supervised area, the dose equivalent received in one year shall not exceed 5 mJ/kg (0.5 rem).

Section 35. Other exposure to be taken into account

Any other exposure to ionizing radiations in the course of a person's occupation shall be taken into account in determining whether the permissible doses set out in Sections 32 to 34 have been reached.

Section 36. Duty to report over-exposure

(1) Any person operating an X-ray installation or an incidental radiation source requiring authorisation must notify the competent authority without delay:

1. if in the case of occupationally exposed persons the maximum permissible radiation dose in relation to the age of the operator, or the permissible dose equivalents set out in Section 32(4), Section 33(1), have been exceeded, as a consequence of the operation of an X-ray installation or of an incidental radiation source requiring authorisation;

2. if an occupationally exposed person has been exposed to the radiation doses specified in Sections 32(6) or 33(2);

3. if, in the case of other persons, the permissible dose equivalents set out in Section 34(2), (3) or (4) have been exceeded, as a consequence of the operation of an X-ray installation or of an incidental radiation source requiring authorisation.

(2) The persons responsible for radiation protection as defined in Section 11(1), paragraph 2, must notify those operating the X-ray installation or incidental radiation source requiring authorisation as soon as they become aware of facts of the nature referred to in sub-section 1 above.

Section 37. Protective measures directed by the competent authority

(1) The competent authority is empowered to decide upon such protective measures as are necessary for the implementation of Sections 1 to 19, and 32 to 36.

(2) When the object of the protective measures is not to avert an imminent threat to life or health, reasonable delay shall be allowed for compliance with the direction.

(3) The direction shall be carried out by those who operate the X-ray installation or incidental radiation source requiring authorisation. In urgent cases the direction may also be addressed to the persons referred to in Section 11(1), paragraph 2. These persons must immediately inform the operator of the X-ray installation or of the incidental source requiring authorisation.

Section 38. Verification ordered by the authorities

The competent authority may, on stating its reasons, require any person operating an X-ray installation or an incidental radiation source requiring authorisation to verify the radiation protection devices by a body to be specified, and to have the verification repeated at specific intervals of time. The results of the verification shall be produced to the authority on request.

Section 39. Measurement of local dose or local dose rate

(1) Whenever this is necessary for radiation protection reasons, the local dose or local dose rate in controlled and supervised areas associated with an X-ray installation or an incidental radiation source requiring authorisation shall be measured. In justified exceptional cases the competent authority may specify the body which shall make the measurements.

(2) The date and results of the measurements referred to in sub-section 1 shall be recorded. The records shall be retained for 30 years and produced to the competent authority on request. The records shall be transferred to competent authority when the operation of the X-ray installation or incidental radiation source requiring authorisation is discontinued.

Section 40. Measurement of personal dose

(1) Persons staying in the controlled area shall be submitted to radiation dose measurements; in the case of use of X-rays on human beings this does not apply to persons under X-ray diagnosis or therapy. The measurements must be taken on the trunk, and underneath protective clothing if this is worn. If individual parts of the body are particularly exposed to radiation, measurements must also be taken at these parts, except where this is not possible in the case of X-rays used on human beings without unreasonable risk to the patient under diagnosis or treatment.

(2) Measurements on the body shall be carried out by two independent procedures. One shall enable the dose to be determined on each occasion and the daily doses measured by this procedure shall be recorded. In the cases referred to in Section 18(5), the necessity of the person's presence in the controlled area shall be justified in the records. The other measurement shall be made by dosemeters, obtained from the competent body (weights and measures body) under Land law and returned to that body at intervals not exceeding one month. The weights and measures body shall establish the dose, record the results of measurement, and give this information in writing to the person handing in the dosemeter. The body shall retain its records for 30 years.

(3) In the case of persons referred to in Section 34(2) and (3), measurements need be made only by one of the procedures specified, but otherwise sub-section 2 above shall apply.

(4) Persons whose personal dose has to be measured shall allow the necessary measurements to be taken.

(5) Any person operating an X-ray installation or an incidental radiation source requiring authorisation shall retain the results communicated by the weights and measurements body and the records referred to in sub-section 2, second sentence, for 30 years, and shall hand them over, on request, to the competent authority. The above mentioned person shall inform those concerned of the measurement results on request, and in any case immediately if the highest permissible dose equivalent as defined in Sections 32 or 33 is exceeded.

(6) On application, the competent authorities may grant exceptions to the provisions of sub-sections 1 to 3 above, provided that no risk is incurred by the persons referred to therein. Should any special risk appear possible because of the way in which the X-ray installation or incidental radiation source requiring authorisation is used, the authority may rule that the dosemeters shall be returned for computation to the weights and measurements body at intervals of less than one month.

(7) In the event of faulty dosemeter measurements should the dosemeter fail, the weights and measurements body may adopt a substitute dose level.

Section 41. Information

(1) Persons who by virtue of their occupation under the provisions of this Ordinance have to be in a controlled area or use X-rays, shall be advised beforehand of the working methods, possible dangers, protective measures to be taken, and insofar as an authorisation is granted, its content and coverage significant to their jobs. This information shall be given to them every six months; the competent authority may decide upon shorter intervals.

(2) Records shall be kept of what information is given and when, and shall be signed by the person advised. The records shall be retained for five years and produced on request to the competent authority.

PART IV

MEDICAL SUPERVISION

Section 42. Medical examination of occupationally exposed persons

(1) Any person operating an X-ray installation or a source of incidental radiation requiring authorisation may employ a person in a controlled area who would normally remain within such an area in the course of his employment, only if such employed person has, within the two months preceding the first day of such employment, been examined by a medical practitioner approved by the competent authority, and has a certificate issued by this doctor, to the effect that there are no objections on health grounds to such employment. A decision by the competent authority in accordance with Section 44 may take the place of the certificate.

(2) Any person operating an X-ray installation or a source of incidental radiation requiring authorisation may continue to employ an occupationally exposed person after the expiry of one year from the last

examination under the provisions of sub-section 1, only if this person has been re-examined by an approved doctor and has a certificate issued by such doctor to the effect that there are no objections on health grounds to continued employment in the controlled area. Sub-section 1, second sentence, shall apply accordingly.

(3) Any person operating an X-ray installation or an incidental radiation source requiring authorisation shall make the results of the personal dose measurements available to the examining doctor.

Section 43. Medical certification

Any person operating an X-ray installation or an incidental source of radiation must keep the medical certificates referred to in Section 42(1) and (2) for 30 years. They shall be produced to the competent authority on request. If an occupationally exposed person terminates his employment, certified copies of this medical certificate shall be given to him forthwith. If the certificate is necessary for taking up a new employment, then on request the certificate itself shall be provided instead of the copy.

Section 44. Decision by the authority

If it is stated in the medical certificate that there are objections to employment on health grounds under Section 42, then on application by the person operating the X-ray installation or incidental radiation source, or by the person examined, the competent authority shall decide whether and under what conditions this latter person may be employed. The competent authority may permit employment only where, on the basis of medical expertise, there is no risk that the health of the person examined will be endangered thereby.

Section 45. Immediate measures in case of a single high dose of radiation

(1) If there is any reason to fear that any person - other than the person under diagnosis or treatment - has, in connection with any activity referred to in the provisions of this Ordinance, received a single dose equivalent of more than 250 mJ/kg (25 rem) or, in the cases referred to in Section 33, over 600 mJ/kg (60 rem), then the person operating the X-ray installation or source of incidental radiation requiring authorisation shall ensure that the person concerned is taken immediately to a qualified doctor. The person operating the X-ray installation or incidental source of radiation requiring authorisation shall immediately cause the facts of the case to be established, and inform the competent authority. In the cases of persons where the personal dose has to be measured in accordance with Section 40(2), fourth sentence, he must immediately cause the measures set out in Section 40(2), fifth sentence, to be taken.

(2) Any person operating an X-ray installation or an incidental source of radiation requiring authorisation, may employ, in controlled areas a person who has received a radiation dose as referred to in sub-section 1, only if permission is given by the competent authority. This authority may permit employment only when on the basis of medical expertise there is no risk that the health of the person will be endangered.

The competent authority may, given the conditions set out in the second sentence above, allow the provisions of Section 32(2), to be disregarded.

Section 46. Medical examination by order of the competent authority

(1) Any person who is or who has been employed as an occupationally exposed person in a controlled area during the operation of an X-ray installation or of a source of incidental radiation requiring authorisation shall submit to examination by a qualified doctor on being so required by the competent authority, if a report under Section 36 has been made or should have been made.

(2) If there is a risk that the health of an occupationally exposed person is endangered if that person continues in one of the occupations referred to in sub-section 1, the competent authority may order that the person concerned shall no longer be employed in the controlled area, or else only to a limited extent.

(3) Sub-sections 1 and 2 shall similarly apply to persons, other than occupationally exposed persons, who are or have been in a controlled area. They are not applicable to persons who have been in a controlled area for the purposes of diagnosis or treatment.

Section 47. General notification of accidents

Any person responsible for radiation protection must immediately inform the competent authority of any accident or case of damage which may lead to radiation damage, during the operation of an X-ray installation or an incidental source of radiation requiring authorisation.

PART V

SUPPLEMENTARY PROVISIONS

Section 48. Change in regulations concerning dentists' qualifying examinations

The regulations for the examination of dentists dated 26th January, 1955 (Bundesgesetzblatt I, p. 37) as amended by the Second Ordinance amending the regulations for the dentists' qualifying examination dated 22nd April, 1971 (Bundesgesetzblatt I, p. 379) are hereby amended as follows:

1. In Section 36(1)(b), amend the words "at an X-ray course" to read "at a radiology course with special reference to radiation protection".

2. In Section 48(3), add the following sentence: "Further, the candidate must demonstrate his knowledge of radiology as necessary for a dentist, and of the protective measures to be taken in connection with the use of ionizing radiations on human beings.

Section 49. Transitional provisions for the continued operation and regarding the design approval of X-ray installations and sources of incidental radiation

(1) For X-ray installations in use for medical and veterinary purpose at the moment this Ordinance enters into force, Section 4 shall be applied in the manner set out in the following sentences. A design approval in accordance with Section 7(2) shall not be required. Proof of compliance with the conditions of Section 3(2), paragraphs 2 and 3 shall be furnished within six months of this Ordinance's entry into force; the competent authority may extend this period. The certificate referred to in Section 4(1) shall be produced within three years of the entry of this Ordinance into force. Within six months of this Ordinance's entry into force the use of the X-ray installation shall be reported on a form as shown in Appendix III .

(2) Should any X-ray installation be in use when this Ordinance comes into force for purposes other than the cases referred to in sub-section 1, then Section 4(1) and (5) shall be applied in the manner set out in the following sentences: Design approval for the X-ray generator in accordance with Section 7(2), is not required, if its design is authorised under previously applicable law. Proof of compliance with the conditions of Section 3(2), paragraphs 2 and 3, shall be produced within six months of this Ordinance's entry into force; the competent authority may extend this period. The certificate under Section 4(1), must be produced within three years of the entry into force of this Ordinance. Within six months of this Ordinance's entry into force use of the X-ray installation shall be reported on a form in accordance with Appendix III .

(3) If any incidental radiation source within the meaning of Section 5 operating at less than 20 kV is in use when this Ordinance enters into force it may continue to be used without authorisation as specified in Section 5(1), even if the conditions of Section 5(2) are not met. This also applies to television apparatus, operated at up to 30 kV. In addition, sources of incidental radiation, operated at over 20 kV may continue to be used without authorisation provided that their operation is reported within six months of the entry into force of this Ordinance, on a form in accordance with Appendix III .

(4) Any person operating an X-ray installation that requires an authorisation in accordance with Section 3 when this Ordinance enters into force shall apply for such authorisation within six months of the date when this Ordinance enters into force. If such application is made within the correct time laid down, the X-ray installation may continue to be operated without authorisation until a decision is reached on the application.

(5) If an application for design approval of an X-ray installation is necessary under previously applicable law and is made before this Ordinance comes into force, the design verification may be carried out in accordance with such previously applicable law and the design approval

granted. The provisions of Section 8(2), first and third sentences, shall apply as appropriate. The first sentence shall apply, as appropriate, to the verification carried out or begun in accordance with previously applicable law under Section 4(1), paragraph 2(b).

(6) Design approval granted under previously applicable law shall be treated as approval under Section 7(2) for ten years after this Ordinance enters into force; Section 8(2), third sentence shall apply as appropriate.

(7) Insofar as medical examination of occupationally exposed persons was not required by previously applicable law, Section 42 shall be applied only one year after this Ordinance enters into force. Section 46 remains unaffected.

Section 50. Transitional provisions regarding the changes in the *regulations for dentists' qualifying examinations*

Dental students who have already completed, when this Ordinance comes into force, three semesters at German science universities after passing the preliminary dentists' examination in full, may take the qualifying examination for dentistry in accordance with the previously applicable provisions provided application to take the examination is made within two years of the date when this Ordinance enters into force.

Section 51. Provisions for the Federal armed forces sector

As regards reporting X-ray installations and sources of incidental radiation under Section 49(1) to (3), the Federal Minister for Defence or the agency appointed by him may rule that a form different from that in Appendix III shall be used for the armed forces.

PART VI

PROVISIONS REGARDING FINES, AND FINAL PROVISIONS

Section 52. Infringements

An infringement of the provisions within the meaning of Section 46(2) of the Atomic Act shall be committed by any person who, intentionally or negligently:

1. *fails to comply with the provisions regarding operation* (Sections 3 to 10) in that he or she

   (a) operates an X-ray installation or an incidental source of radiation without the authorisation required under Section 3(1) or Section 5(1), first sentence;

(b) substantially modifies an X-ray installation or an incidental source of radiation or its operation without the authorisation required under Section 3(3) or Section (5)1 second sentence, taken in conjunction with Section 3(3);

(c) fails to report, reports incorrectly or incompletely, or does not report within the proper time, as required under Section 4(3), paragraph 4 and paragraph 5, second and third sentences, or Section 6(1), first sentence;

(d) operates an X-ray installation in violation of an enforceable prohibition under Section 4(6);

(e) permits, in violation of Section 5(4), another person to operate an incidental source of radiation;

(f) maintains or repairs, in violation of an enforceable prohibition under Section 6(2), an X-ray installation or incidental sources of radiation;

2. does not comply with the provisions regarding operation (Sections 11 to 41) in that he

(a) fails to report, reports incorrectly or incompletely or does not report within the right time as required under Section 11(2), paragraph 2, second sentence;

(b) fails, in violation of Section 11(2), second sentence, to report a defect or does not report it within the proper time;

(c) fails to comply with the provisions regarding the observance of protective measures as laid down in Section 12 in conjunction with Sections 13, 15(1) to (3), 16(2), second sentence, 17(1) to (3) and (5), 18(1) to (5), (7) and (9), 19 to 21(1), (2) and (3), first sentence, 30(1) and (2), 31 to 33(1) and (2), second sentence, 34, 35, 39(1), first sentence and (2), 40(1) and (2), first to fourth sentence and 41;

(d) fails to have available, in violation of Section 14(1), paragraph 1, a copy of the authorisation document, a copy of the approval certificate or the instructions for operation;

(e) fails to have a copy of this Ordinance available or displayed, in violation of Section 14(1), paragraph 2;

(f) fails to discontinue, in violation of Section 14(2), the operation of an X-ray installation or of a source of incidental radiation;

(g) operates an X-ray installation outside the X-ray room in violation of Section 16(1);

(h) uses X-rays without being so authorised under Sections 20, 30(1) or (2) or 31;

(i) uses X-rays on live human beings for purposes other than those laid down in Section 21(1), or without being so

authorised in accordance with Section 21(3), sentence 1, or causes X-rays to be used without being so authorised in accordance with Section 21(2);

(j) fails to comply with the provisions of Section 29(1), (2) or (4) regarding the enquiries to be made of patients, and regarding records and the keeping and transferring of records;

(k) fails to give information or gives incorrect or incomplete information concerning records, or fails to furnish the documents or furnishes them incompletely, in violation of Section 29(5);

(l) fails to report, or does not report within the proper time, any exceeding of the permitted dose equivalent or any abnormal radiation dose, in violation of Section 36(1), or fails in his obligation under Section 36(2) or Section 38(3), third sentence, to provide the required information;

(m) fails to carry out, carries out incorrectly, or does not carry out within the proper time, an enforceable direction from the competent authority under Section 37(1) or Section 40(6) second sentence;

(n) fails to have an X-ray installation or an incidental source of radiation verified, in disregard of an enforceable direction under Section 38, first sentence, or fails to produce or incompletely produces the results of the verifications in disregard of an enforceable direction under Section 38, second sentence;

(o) refuses to allow the personal dose to be measured, in violation of Section 40(4);

(p) fails to keep or produce reports or records, in violation of Section 40(5), first sentence, or fails to report or does not report in due time to the persons concerned, the results of the measurements or the fact that a person's maximum permissible dose equivalent has been exceeded, in violation of Section 40(5), second sentence.

3. fails to comply with any of the provisions regarding medical supervision (Sections 42 to 47) in that he

(a) employs a person in a controlled area in violation of Section 42(1), first sentence, or Section 45(2), first sentence or continues to employ a person within the controlled area in violation of Section 42(2), first sentence;

(b) fails to produce to the doctor the results of the personal dose measurements, in violation of Section 42(3);

(c) fails to retain or produce a medical certificate in violation of Section 43, first or second sentence, or fails to provide certified copies or medical certificates in violation of Section 43, third or fourth sentence;

(d) in violation of Section 45(1), first sentence, fails to cause any person referred to therein to attend a qualified doctor, or does not do so at the proper time; fails to have the facts established or a report made or does not do so at the proper time, in violation of Section 45(1), second sentence, or fails to take the necessary steps under Section 40(2), fifth sentence, or does not do so at the proper time, in violation of Section 45(1), third sentence;

(e) fails to submit, on enforceable request, to medical examination in violation of Section 46(1), or (3), first sentence;

(f) employs a person within a controlled area, in disregard of an enforceable direction from the competent authority in accordance with Section 46(2), or (3), first sentence;

(g) fails to report an accident or other damage during the operation of an X-ray installation or an incidental source of radiation, or does not do so at the proper time, in violation of Section 47.

Section 53. Provisions relating to Berlin

This Ordinance shall also be applicable to Berlin under Section 14 of the Third Control Act of 14th January, 1952 (Bundesgesetzblatt I, p. 1), taken in conjunction with Section 58 of the Atomic Energy Act and Section 21 of the Act concerning the practice of dentistry.

Section 54. Entry into force

(1) This Ordinance shall enter into force on the first day of the sixth calendar month after its publication.

(2) The Ordinance concerning protection against damage caused by X-rays and radioactive material in non-medical applications of 7th February, 1941 (Reichsgesetzblatt I, p. 88) shall cease to have effect as from the date when this Ordinance enters into force.

F R A N C E

DECREE N° 63-1228 OF 11TH DECEMBER 1963 CONCERNING NUCLEAR INSTALLATIONS, AS AMENDED BY DECREE N° 73-405 OF 27TH MARCH 1973*

Section 1

The provisions of the present Decree shall apply to large nuclear installations as defined in Section 2 which are operated by any natural or legal person, public or private, civil or military.

Section 2

Large nuclear installations are:

(1) Nuclear reactors, with the exception of those comprised in a means of transport;

(2) Particle accelerators, the characteristics of which are specified by joint Order of the Minister for Education, the Minister for Industrial and Scientific Development and the Minister of Health;

(3) Plants for manufacture, processing or conversion of radioactive substances, i.e. all natural or artificial substances emitting radiations which are directly or indirectly ionizing, namely: plants for manufacture of nuclear fuels, isotopic separation of nuclear fuels, reprocessing of irradiated nuclear fuels or processing of radioactive wastes;

(4) Facilities for the storage, deposit or use of radioactive substances, including wastes and notably those intended for irradiation.

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* This text incorporates the amendments made by the amending Decree. The passages underlined represent amendments to the original text. This text is an unofficial translation prepared by the Secretariat.

The plants and installations defined in paragraphs 3 and 4 above shall be deemed large nuclear installations when the quantity or total activity of the radioactive substances that may be held in them exceeds the minimum laid down, according to the type of installation and the radioisotope in question, by joint Order of the Minister for Industrial and Scientific Development, the Minister of Health and the Minister responsible for Protection of Nature and the Environment.

All equipment contained within the perimeter referred to in Section 3 shall be deemed part of the large nuclear installation.

Section 3

The setting up of large nuclear installations shall be subject to prior authorisation; the application for authorisation shall state the characteristics of the large nuclear installation or installations and of the establishments referred to in Section 6bis which are the subject of the application; it shall include a plan showing the perimeter of the installation within the nuclear site. A nuclear site may comprise several large nuclear installations having the same operator and constituting an organic whole; on the same conditions it may also offer possibilities for the creation of new installations.

The application for authorisation shall be submitted to the Minister for Industrial and Scientific Development and, where necessary, to the Minister responsible for the establishment. The Minister for Industrial and Scientific Development shall give notification of this application to the Minister for the Interior, the Minister for Territorial Development, Equipment, Housing and Tourism, the Minister for Cultural Affairs, the Minister responsible for Protection of Nature and the Environment, the Minister for Agriculture and Rural Development, the Minister of Health and the Minister of Transport.

The application shall be subject to a local enquiry. The local enquiry shall not be compulsory:

(a) for a large nuclear installation which has already been the subject of an enquiry prior to being declared of public interest, provided that the installation is in conformity with the project submitted at that enquiry or that any alterations made do not substantially affect the size or purpose of the installation or increase the hazards constituted by such installation;

(b) in the case of alterations made to an installation or projected installation which has already been the subject of a local enquiry, if such alterations satisfy the conditions laid down in the previous sub-paragraph;

(c) for applications for authorisation of a change of operator submitted under Section 6.

Joint Orders of the Minister for the Interior, the Minister for Territorial Development, Equipment, Housing and Tourism, the Minister responsible for Protection of Nature and the Environment, the Minister for Industrial and Scientific Development and the Minister of Health shall determine the procedures for conduct of the local enquiry.

The autorisation shall be granted, subject to the opinion of Committee referred to in Section 7, by Decree made on the report of the Minister for Industrial and Scientific Development and, where applicable, the Minister under whom the establishment comes, and subject to the concurrence of the Minister of Health.

If the Minister of Health has not given his opinion within three months from the date on which it is requested, the authorisation may be granted by Decree made in the Council of Ministers.

A list of large nuclear installations shall be established and kept up to date by the Minister for Industrial and Scientific Development.

Section 3 bis

(a) Notwithstanding the provisions of Section 3, the setting up of certain large nuclear installations with activity levels below those fixed by joint Orders of the Minister for Industrial and Scientific Development, the Minister responsible for Protection of Nature and the Environment and the Minister of Health may be authorised on the conditions laid down in the present Section.

(b) The large nuclear installations defined in paragraph (a) may be authorised, for a non-renewable period of less than six months by Order of the Minister for Industrial and Scientific Development, without a local enquiry, subject to the opinion of the Préfet or Préfets concerned and of the Permanent Unit provided for in Section 10.

(c) The large nuclear installations defined in paragraph (a), when built to a standard specification, may be authorised on the following conditions:

- a Decree made on a report by the Minister for Industrial and Scientific Development, subject to the opinion of the Committee referred to in Section 7 and with the concurrence of the Minister of Health shall give approval in principle for the type of installation;

- an Order of the Minister for Industrial and Scientific Development, made after the local enquiry provided for in Section 3 and subject to the opinion of the Permanent Unit referred to in Section 10, shall authorise operation within a certain perimeter.

(d) Mobile large nuclear installations in the category defined in paragraph (a) may be authorised on the following conditions:

- a Decree made on the report of the Minister for Industrial and Scientific Development, subject to the opinion of the Committee referred to in Section 7 and with the concurrence of the Minister of Health, shall approve the installation in principle;

- an Order by the Minister for Industrial and Scientific Development, made without a local enquiry, subject to the opinion of the Préfet or Préfets concerned and of the Permanent Unit referred to in Section 10, shall authorise parking of the installation within one or more specified perimeters, and shall fix the maximum length of time;

- the operation of moving an installation from one perimeter to another shall fall within the scope of the regulations concerning carriage of dangerous substances.

Section 3 ter

Certain categories of nuclear installations of lesser importance may be placed outside the scope of application of the present Decree by joint Order of the Minister responsible for atomic affairs, the Minister for Industry and the Minister of Health, without prejudice to possible application of the Act of 19th December 1917.

Section 4

The authorisation for the setting up of an installation shall specify the perimeter and the characteristics of the installation and the special requirements with which the operator must comply, notwithstanding application of the general technical rules referred to in Section 10 bis. It shall in particular lay down the conditions for commissioning the installation.

These conditions may, if necessary, be amended by Decrees made according to the procedure specified in Section 3.

These conditions do not prevent application of the provisions laid down in Book II of the Labour Code and by enactments made in implementation thereof in the interests of the health and safety of workers.

Section 5

The authorisation for construction shall also specify the period within which the installation is to be commissioned, according to its nature.

If the installation has not been commissioned within the period laid down or if it is not operated for a consecutive period of two years, a fresh authorisation, granted under the same procedure, shall be required.

Section 6

A further authorisation, granted under the procedure specified in Section 3, must be obtained :

- when the operator wishes to add another large nuclear installation to an existing installation;
- when there is a change of operator of an authorised large nuclear installation;
- when a large nuclear installation is moved;
- when a large nuclear installation is to undergo alterations of a nature such as to lead to non-compliance with the requirements previously imposed;

- when a large nuclear installation is destroyed or shut down for a period of more than two years as the result of fire, explosion or any other incident;

- when the perimeter of a large nuclear installation is modified.

Section 6 bis

Establishments falling within the scope of application of the Act of 19th December 1917 which are situated within the perimeter referred to in Section 3 above shall be subject to the following requirements notwithstanding the provisions laid down in the said Act and its implementing enactments:

(a) the Minister for Industrial and Scientific Development shall act in place of the Préfet or Préfets concerned for any administrative action concerning these establishments. He shall keep the Préfet or Préfets informed of any such action;

(b) applications for authorisation of Category 1 and 2 establishments included in the application for authorisation of a large nuclear installation do not require a separate enquiry; the enquiry must satisfy the conditions laid down in Sections 7 and 9 of the Act of 19th December 1917. These establishments shall be authorised by the Decree authorising the large nuclear installation within the perimeter of which they are situated;

(c) the Minister for Industrial and Scientific Development shall inform the operator, subject to the opinion of the Inspector of Large Nuclear Installations referred to in Section 11, of the technical requirements with which he must comply.

Section 7

An Interministerial Committee for large nuclear installations shall be set up, composed as follows:

One member of the Council of State having at least the rank of Counsellor, as Chairman;

The High Commissioner for Atomic Energy or his representative as Vice-Chairman;

A representative of the Minister for Defence;

A representative of the Minister of Labour;

Two representatives of the Minister for the Interior;

One representative of the Minister for Economic Affairs and Finance;

One representative of the Minister for Education;

One representative of the Minister for Territorial Development, Equipment, Housing and Tourism;

One representative of the Minister for Cultural Affairs;

One representative of the Minister responsible for Protection of Nature and the Environment;

One representative of the Minister for Agriculture and Rural Development;

Three representatives of the Minister for Industrial and Scientific Development;

Two representatives of the Minister of Health;

One representative of the Minister of Transport;

Two representatives of the Atomic Energy Commission ;

One representative of the National Centre for Scientific Research;

Two representatives of Electricité de France;

One representative of the National Institute for Health and Medical Research;

One representative of the Central Service for Protection against Ionizing Radiations;

One representative of the National Institute for Agricultural Research;

Three members chosen for their special competence in the nuclear field, being proposed by the Minister for Industrial and Scientific Development and one by the Minister of Health.

Deputy members shall be nominated, their number being equal to that of Members.

The Chairman, Members and Deputies shall be appointed by Order of the Prime Minister for a period of five years.

The Committee shall also include a Permanent Secretary, who is entitled to speak and vote, appointed by Order of the Prime Minister on the proposal of the Minister for Industrial and Scientific Development. A Deputy permanent secretary shall be nominated by the same procedure.

The Committee may call on the assistance of technicians or other persons specially competent for the study of a given question and may undertake any technical consultation which it deems necessary.

Section 8

The Committee shall give its opinion concerning requests for authorisation to set up or modify large nuclear installations, and concerning the special requirements applicable to individual installations. The Committee must give its opinion within two months after the matter has been referred to it by the Minister for Industrial and Scientific Development.

The Committee shall give its opinion and make proposals on other questions relating to large nuclear installations, and in particular:

In this connection draft regulations for protection of workers, the public, nature and the environment must be submitted to the Committee when they concern large nuclear installations.

Section 9

The Committee shall meet at least once per year, and whenever convened by its Chairman.

Decisions are taken by majority vote. Where votes are equal the Chairman shall have the casting vote.

The Committee shall draw up its standing orders. Applications for authorisation and requests for opinions shall be sent to the Secretariat of the Committee by the Minister responsible for Atomic Energy*. They shall be the subject of a report by the Permanent Secretary.

Section 10

A Permanent Unit shall be set up within the Committee, consisting of the Chairman, Vice-Chairman and Permanent Secretary of the Committee and the following members designated by the Chairman among the Members or Deputy Members of the Committee:

The representative of the Minister of State for Social Affairs;

A representative of the Minister for the Interior;

The representative of the Minister for Protection of Nature and the Environment;

The representative of the Minister for Territorial Development, Equipment, Housing and Tourism;

A representative of the Minister for Industrial and Scientific Development;

A representative of the Minister of Health;

The representative of the Central Service for Protection against Ionizing Radiations;

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* Note by the Secretariat: when the present Decree was drafted in 1963, the Minister responsible for Atomic Energy was primarily competent regarding authorisations for large nuclear installations. In 1973, those same powers lie with the Minister for Industrial and Scientific Development, which explains why both appelations are to be found here , according to whether the 1963 or the 1973 texts are referred to.

A representative of the Atomic Energy Commission;

A representative of Electricité de France.

The Chairman may designate Deputy Members, their number being equal to that of Members.

The Permanent Unit shall invite a representative of the Minister responsible for the installation under examination, when the latter does not come under the Minister for Industrial and Scientific Development.

In the event of equal voting, the Chairman shall have a casting vote.

The Permanent Unit shall be competent ipso jure to express, on behalf of the Committee, the opinions provided for in Section 3 bis, and opinions on applications for authorisation which are necessary under Section 6, in case of a change of operator, alterations likely to lead to non-observance of the requirements imposed or changes in the perimeter.

The Committee may also refer to the Permanent Unit, to express an opinion on its behalf, other applications submitted to it which present no special difficulties.

Section 10 bis

General technical rules concerning safety of large nuclear installations shall be issued in the form of an Order by the Minister for Industrial and Scientific Development.

Section 11

Supervision of large nuclear installations, shall be carried out by inspectors of large nuclear installations chosen from among persons responsible for the supervision of classified establishments and designated jointly by the Minister responsible for the Protection of Nature and the Environment and the Minister for Industrial and Scientific Development, and placed under the latter's authority. These inspectors shall supervise application of the general technical rules concerning large nuclear installations, the provisions contained in the Decree authorising construction and any requirements imposed later on the operator in application of such Decree of authorisation or under Section 6 bis.

The inspectors of large nuclear installations shall also be responsible for the supervision provided for in the Act of 19th December 1917 as amended, as regards establishments referred to in Section 6 bis of this Decree.

The inspectors appointed must take an oath of office and shall be bound by professional secrecy, as laid down in Section 28 of Decree No. 64-303 of 1st April 1964.

Officials of the Central Service for Protection against Ionizing Radiations, in their capacity as commissioned and sworn officials shall be responsible for supervising application of the regulations concerning discharge of radioactive effluents, with a view to protection of public health.

In the exercise of their functions the inspectors of large nuclear installations and officials of the Central Service for Protection against Ionizing Radiations shall keep in close contact with the departmental services concerned. They may enlist the assistance of technicians.

The above provisions shall not prevent application of other supervisory measures provided for in the legislation in force. This is, for example, the case as regards labour inspection and technical checks on construction and operation of nuclear installations intended for electricity generation, carried out by Government supervisory engineers; inspections must be carried out in liaison with the inspectors of large nuclear installations and officials of the Central Service for Protection against Ionizing Radiations.

Section 12

Infringement of the provisions of Title I of the Act of 2nd August 1961, referred to above, with regard to radioactive pollution from the installations referred to in Section 2 of the present Decree, and of the regulations made thereunder shall be punishable by a fine of Frs. 400 to Frs. 2,000.

Section 13

In case of emergency the Minister for Industrial and Scientific Development, and whether or not on the proposal of the Minister of Health or the Minister under whom the establishment comes, shall take on his own authority all executive measures necessary to bring the incident to an end and guarantee safety; he may in particular suspend operation of the installation, if necessary by placing it under seal.

Section 14

Large nuclear installations listed in Section 2 which existed prior to publication of the present Decree shall not be subject to authorisation but shall be subject to the inspection provided for in Section 11.

Within a period of two months from publication of the present Decree, such installations must be notified to the Minister responsible for Atomic Energy.

When the operation of these installations gives rise to hazards the operator may be required to take the necessary remedial measures as provided in Section 4(2).

Section 15

Within one year from the publication of the present Decree the operators of large nuclear installations existing at the date of publication shall forward to the Minister for Industrial and Scientific Development a file defining in particular the site and perimeters referred to in Section 3 of the Decree of 11th December 1963 mentioned above, as amended by the present Decree.

The Minister shall notify to the operator the perimeter authorised for the installations. Such notification shall be equivalent to approval within the meaning of Section 3 and completion of the formalities required under this Decree.

The establishments referred to in Section 6 bis of the Decree of 11th December 1963 referred to above, amended by the present Decree, which existed prior to publication of the present Decree, shall be notified, if they have not already been so notified, to the Minister for Industrial and Scientific Development within one year from publication of the present Decree.

They shall be subject to the provisions of Section 6 bis of the Decree of 11th December 1963 referred to above, as amended by the present Decree. However, when they have already been authorised, no further authorisation is needed under the procedure provided for in these Sections.

Section 16

When an installation not covered by Section 2 of the present Decree and not subject to the Act of 19th December 1917 is a source of hazard due to production, use or possession of radioactive substances, the Minister responsible for Atomic Energy and, where applicable, the Minister under whom the establishment comes, with the concurrence, or on the proposal of the Minister responsible for Health and Population or the Minister of Labour or again the Minister responsible for Industry, shall jointly require the operator of that installation to take the necessary measures to eliminate any hazards that have been found to exist and at the same time to have the installation classified.

In an emergency the Minister responsible for Atomic Energy, subject to the opinion or, where appropriate on the proposal of the Minister of Health or the Minister under whom the establishment comes, shall have full authority to take any executive measure necessary to put an end to the incident; he may for example suspend operation of the installation, if need be by placing it under seal.

Section 17

Large nuclear installations connected with national defence and classified as secret by the Prime Minister on the proposal of the Minister for the Armed Forces and the Minister responsible for Atomic Energy shall no longer be subject to the provisions of the present Decree as from the date of the decision so classifying them.

Section 18

Joint Orders by the Minister responsible fo Atomic Energy, the Minister of Health and Population and, where necessary, the other Ministers concerned, made after obtaining the opinion of the Committee referred to in Section 7 above, shall determine procedures for the application of the present Decree.