Insurance for Nuclear Installations

LEGAL SERIES No.6

INTERNATIONAL ATOMIC ENERGY AGENCY, VIENNA, 1970

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The Agency's Statute was approved on 23 October 1956 by the Conference on the Statute of the IAEA held at United Nations Headquarters, New York; it entered into force on 29 July 1957. The Headquarters of the Agency are situated in Vienna. Its principal objective is "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world".

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LEGAL SERIES No. 6

INSURANCE FOR NUCLEAR INSTALLATIONS

REPORTS AND DOCUMENTS
RESULTING FROM A
PANEL OF EXPERTS CONVENED BY
THE INTERNATIONAL ATOMIC ENERGY AGENCY
IN VIENNA, 24-28 NOVEMBER 1969

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA, 1970

INSURANCE FOR NUCLEAR INSTALLATIONS
IAEA, VIENNA, 1970
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FOREWORD

One of the important legal questions which must be faced early in the development of nuclear activities is that of ensuring adequate financial protection against nuclear risks. Consideration must be given both to the possibility of damage to the nuclear facility itself and of personal and property damage to third parties. A special legal system has been established at the international level in respect of third party liability and a number of countries are adopting national legislation in this field. A world-wide convention was concluded in 1963 under the auspices of the International Atomic Energy Agency (the Vienna Convention on Civil Liability for Nuclear Damage, signed on 21 May 1963) following an earlier regional convention signed in 1960 (OECD Convention on Third Party Liability in the Field of Nuclear Energy, 29 July 1960; additional measures increasing financial compensation available were taken in the Brussels Supplementary Convention of 31 January 1963).

Since many countries are at the present time in the early stages of their nuclear development, the Director General of the Agency called together a Panel of Experts to advise him on the particular problems encountered by developing countries in respect of financial protection for nuclear damage. The Panel met at the Agency Headquarters in Vienna from 24 to 28 November 1969. The Report of the Panel and also the Report prepared by the Secretariat at the request of the Panel are reproduced herein in the four working languages of the Agency. The papers prepared by the Advisers to the Panel, Experts and the Secretariat appear in the language in which they were presented.

As the numerous aspects discussed are closely related and, consequently, are dealt with simultaneously in several papers, it seemed preferable to adopt a general order of presentation in this volume: Papers of a comprehensive nature are presented first, followed by those which deal with problems of a more specific kind and by notes on national legislation. In addition, as a matter of convenience, a list of nuclear insurance pools has been included and the text of the Vienna Convention has also been reproduced in the four languages of the Convention.

CONTENTS

REPORT OF THE PANEL

The Panel on Nuclear Insurance, convoked by the Director General of the International Atomic Energy Agency, met at the Agency Headquarters from 24 to 28 November 1969.

The Panel discussed the risks incurred in the construction and operation of nuclear power plants and methods of financial coverage for such risks. It considered problems of international and national law related to third party liability for nuclear damage as well as insurance and other financial security required therefor. Questions of workmen's compensation (social security) for radiation damage suffered by the personnel of nuclear installations were also discussed. Damage to the nuclear plant itself and other on-site property were equally considered. A number of papers on the various subjects submitted by the advisers, prepared by the Secretariat or collected by it, were in part presented orally and formed the basis of Panel discussions. The experts reported on the legal situation regarding liability and insurance for nuclear damage in their respective home countries.

The Panel recommends to the Director General that:

(a) The Secretariat prepare a summary report on the problems and solutions discussed;

(b) This report be communicated to Governments of IAEA Member States together with all or part of the papers submitted to the Panel, and that the report and the papers be printed for wider distribution.

(c) The Agency Secretariat continue to observe developments in the fields of liability and nuclear risk insurance; and

(d) If appropriate, another panel on nuclear insurance should be convened after two or three years to review the development in this field and, if necessary, make new recommendations in the light of experience gained.

RAPPORT DU GROUPE D'ETUDE

Le Groupe d'étude de l'assurance nucléaire, constitué par le Directeur général de l'Agence internationale de l'énergie atomique, s'est réuni au Siège de l'Agence du 24 au 28 novembre 1969.

Le Groupe a examiné les risques encourus pendant la construction et l'exploitation des centrales nucléaires et les modes de couverture financière de ces risques. Il a étudié les problèmes de droit interne et international posés par la responsabilité civile en cas de dommages nucléaires, ainsi que l'assurance et d'autres garanties financières relatives à cette responsabilité. Les questions d'indemnisation (sécurité sociale) pour les radiolésions subies par le personnel des installations nucléaires ont également fait l'objet de discussions. On a examiné aussi la question des dommages causés à la centrale nucléaire même et à d'autres biens se trouvant sur le site. Les mémoires sur les divers sujets, communiqués par les consultants, établis par le Secrétariat ou reçus par celui-ci ont été en partie présentés oralement; ils ont servi de base de travail au Groupe dans ses délibérations. Les experts ont fait rapport sur le régime juridique de la responsabilité civile en cas de dommages nucléaires et de l'assurance contre ces risques, qui est appliqué dans leurs pays respectifs.

Le Groupe d'étude recommande au Directeur général de prendre les mesures suivantes:

a) Charger le Secrétariat d'établir un rapport succinct sur les problèmes et les solutions examinés;
b) Communiquer le présent rapport aux gouvernements des Etats Membres de l'Agence, en même temps que la totalité ou une partie des mémoires présentés au Groupe, et faire imprimer le rapport et les mémoires en vue d'en assurer une diffusion plus large;
c) Charger le Secrétariat de l'Agence de continuer de suivre l'évolution dans le domaine de la responsabilité civile et de l'assurance contre les risques nucléaires;
d) Réunir, si besoin est, au bout de deux ou trois ans un autre groupe d'étude de l'assurance nucléaire qui ferait le bilan des progrès réalisés dans ce domaine et formulerait, le cas échéant, de nouvelles recommandations compte tenu de l'expérience acquise.

ДОКЛАД СОВЕЩАНИЯ ЭКСПЕРТОВ

Совещание экспертов по ядерному страхованию, созванное Генеральным директором Международного агентства по атомной энергии, состоялось в Центральных учреждениях Агентства с 24 по 28 ноября 1969 года.

Совещание экспертов обсудило вопросы, связанные с риском при сооружении и эксплуатации ядерных электростанций, а также способы финансового покрытия расходов в случае таких рисков. Оно рассмотрело проблемы международного и национального законодательств, касающиеся ответственности за ядерный ущерб перед третьей стороной, а также вопросы страхования и прочего финансового обеспечения, необходимого в данном случае. Были обсуждены также вопросы, связанные с выплатой компенсаций (социальное обеспечение) за радиационный ущерб, понесенный персоналом ядерных установок. Одновременно были рассмотрены вопросы, касающиеся ущерба, наносимого самой ядерной электростанции и прочему имуществу, находящемуся на территории станции. Многие доклады по различным вопросам, представленные консультантами, подготовленные Секретариатом или полученные им со стороны, были частично представлены устно и легли в основу обсуждений на совещании. Эксперты доложили о состоянии дел в своих странах в области законодательства, касающегося ответственности за ядерный ущерб и страхования.

Совещание экспертов рекомендует Генеральному директору, чтобы:

a) Секретариат подготовил итоговый доклад об обсужденных на совещании проблемах и способах их решений;

b) Данный доклад был направлен правительствам государств-членов МАГАТЭ вместе со всеми докладами или с частью докладов, представленных на совещание экспертов, чтобы данный доклад и представленные доклады были размножены для более широкого распространения;

c) Секретариат Агентства продолжал следить за развитием событий в области ответственности за ядерный ущерб и страхования ядерного риска; и

d) Через два или три года было созвано, если это будет признано необходимым, еще одно совещание экспертов по ядерному страхованию с целью рассмотреть состояние дел в данной области и выработать, если необходимо, новые рекомендации в свете приобретенного опыта.

INFORME DEL GRUPO DE EXPERTOS

Convocado por el Director General del Organismo Internacional de Energía Atómica, el Grupo de expertos en seguros nucleares se reunió en la Sede del Organismo del 24 al 28 de noviembre.

El Grupo examinó los riesgos que entraña la construcción y explotación de centrales nucleares, y las posibles modalidades de cobertura financiera de esos riesgos. Se estudiaron diversos problemas de derecho internacional y nacional relativos a la responsabilidad civil por daños nucleares y a los seguros y otras garantías financieras necesarias. También se trató en la reunión de cuestiones relativas a la indemnización de los trabajadores (seguros sociales) por lo que respecta a las radiolesiones sufridas por el personal de las instalaciones nucleares. Se examinó igualmente la cuestión de los daños sufridos por la instalación nuclear propiamente dicha o por otros bienes materiales situados dentro del recinto de la instalación. Parte de las memorias que sobre diversos temas habían sido presentadas por los asesores, preparadas por la Secretaría o que ésta se había procurado fueron presentadas oralmente y sirvieron de base para las discusiones del Grupo. Los expertos informaron acerca de la situación jurídica en sus respectivos países en materia de responsabilidad civil y seguro de daños nucleares.

El Grupo recomienda al Director General:

a) Que la Secretaría prepare un informe que recapitule los problemas y soluciones examinados en la reunión;
b) Que se envíe dicho informe a los Estados Miembros del Organismo, junto con la totalidad o parte de las memorias presentadas al Grupo, y que el informe y las memorias se impriman para poder darles mayor difusión;
c) Que la Secretaría del Organismo siga de cerca los acontecimientos en las esferas de la responsabilidad civil y del seguro de riesgos nucleares;
d) Que, de ser procedente, se convoque otro grupo de expertos en seguros nucleares dentro de dos o tres años para que examine los acontecimientos ocurridos en esta esfera y, en caso necesario, formule nuevas recomendaciones si así lo aconseja la experiencia adquirida.

REPORT BY THE SECRETARIAT OF THE IAEA

I. The Panel was convened at the Agency Headquarters in Vienna, from 24 to 28 November 1969, in order to study and review specific problems of nuclear insurance in Member States which are in the early stages of nuclear development. The scope of the Panel's work was limited to problems with respect to the construction and operation of nuclear power plants and was concerned, in particular, with the third party liability of the operator and questions of property insurance.

The Panel consisted of experts appointed by the Director General, on the proposal of the Governments concerned, to advise him in their personal capacities, as well as advisers and other participants. Its composition was as follows:

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II. DISCUSSIONS

The experts discussed the various risks involved in the construction and operation of nuclear power plants and the multiple considerations involved with respect to financial security for these risks. Primary attention was given to nuclear risks, but at the same time it was recognized that various non-nuclear hazards had to be taken into account by the operator of a nuclear facility; moreover, there might be a combined effect of these risks in the event of an accident.

Nuclear risks present certain special features compared with conventional risks:

(i) the possibility of damage on an exceptional scale and in many different forms, arising from a single incident;
(ii) the relatively small number of nuclear installations already existing or to be built during the next few years;
(iii) the delayed effects of damage which may result from a nuclear incident.

Discussion confirmed that nuclear risks may be divided into two general categories:

(a) Material damage to the nuclear installation itself and the consequences thereof; and
(b) Damage to third parties (including employees); this covers both personal injuries and property damage.

Financial security to meet these risks may take different forms, or a combination thereof. It will depend on the type and extent of risk, the value of the installation, applicable law and the financial means available. Moreover, as concerns third party liability and injury to employees it may also depend on requirements established by specific laws and regulations in this field. With respect to material damage to the nuclear installation, financial security, if any, will normally take the form of private insurance. In some cases, however, insurance cover will not be taken, either by choice or because cover is not available for certain risks. There will thus be no insurance cover for all or part of these risks, unless the operator is in a position to provide a measure of "self insurance".

The position in respect of damage to third parties is somewhat different because, under common law, liability is usually unlimited; but where liability is governed by international convention (Vienna Convention on Civil

Liability for Nuclear Damage, Paris Convention on Third Party Liability in the Field of Nuclear Energy) and by specific national laws and regulations, this will be subject to a special system. If no such special system exists, "self insurance" remains a theoretical possibility; where such system does exist, "self-insurance" is possible only where the State, or one of its constituent subdivisions, is the operator of the nuclear installation. However, private insurance is usually the kind of financial security sought to cover third party liability.

Nevertheless, as a consequence of the high potential liability involved, State guarantees may be provided, in varying forms:

(i) as the sole type of financial security (normally for State-operated/owned installations or for installations operated/owned by semi-governmental bodies);
(ii) as a supplement to insurance cover, where this does not meet the full liability of the operator; or
(iii) as an additional cover, beyond the amount of the operator's liability.

Material damage

With respect to material damage to the nuclear installation itself and the consequences thereof, the experts discussed in detail the various types of risks involved in the construction and operation of nuclear power plants. Both nuclear and non-nuclear risks had to be taken into account, but these were often closely related. Discussion brought out that careful distinction between these risks through the delimitation of the "nuclear" and "non-nuclear" parts of a nuclear installation for rating purposes enables the pattern of rates to reflect the actual risk involved in the individual separate buildings within a nuclear installation site. This might result in substantial savings in total insurance premiums. Nevertheless, where several different insurance policies were taken, it was emphasized that careful attention would have to be given to avoid gaps in coverage. Moreover, should an accident occur there might also be some uncertainty as to which policy, if any, applied. It was pointed out that in most countries all such risks are included in a single policy (although, of course, certain risks were not covered even here), thus avoiding the problems involved in differentiating between the two kinds of risks in the event of an accident.

Discussion took place on the special problem of the insurance of machinery breakdown and electrical breakdown risks. It was brought to light that insurance was easily available for zero radioactivity zones, and that although it might be granted in low radioactivity zones, there were very serious problems involved in making available such coverage in high radioactivity zones.

Consequential losses

These losses, where an accident results in the shutting down of a reactor and, in the case of a nuclear power station, an interruption of electricity output, include loss of income or profits and standing charges. Cover for such losses would have to cover the same kinds of risks as the underlying policy for material damage. The rating of such coverage is, however, very difficult.

The experts considered the general problem of cover for material damage in the context of countries in the early stages of nuclear power production. Nuclear power stations would normally be operated by the State itself, and the problem was mainly an economic one. High capital investments were involved in repair and reconstruction, which had to be balanced against the costs of insurance cover. Several experts emphasized that an important consideration in developing countries would be the influence of foreign exchange where insurance or re-insurance had to be taken abroad; this would also be a factor where foreign exchange is required for the construction or supply of all or part of the installation. In the case of material damage, if replacement parts had to be purchased abroad in foreign currency, this might influence the decision as to whether insurance cover would be taken.

Third party liability

With respect to damage to third parties, the experts agreed that the Vienna Convention on Civil Liability for Nuclear Damage provided a highly satisfactory basis for the establishment of national legislation in this field, and for resolving problems which might arise where a nuclear incident involves nationals of more than one country.

Although the experts agreed that it was not their role to advise States in this respect, it was felt generally that there would be considerable advantage gained if some harmonization could be reached in the way the Vienna Convention was applied.

One of the major problems emphasized in discussions was that of the provision of cover for liability . The Vienna Convention establishes only a minimum amount of liability and each State will set the amount for its own operators. Liability is established per incident, but it was pointed out that insurance cover is not always available on that basis and may only be granted on a per installation basis for a certain period of time; this is the case even in countries with developed nuclear industries where insurance assets have been marshalled, and it was pointed out that in elaborating legislation in the field, nuclear developing countries should envisage appropriate measures to ensure that the minimum amount is always available.

Cover was also considered in the context of delayed damage which might not become known until long after the nuclear incident. This was related as well to the period of prescription for the submission of claims which is, in principle, 10 years from the nuclear incident, but may be limited to not less than three years from the date on which the person suffering damage had knowledge, or should have had knowledge, of the damage and of the operator liable. Attention was given to the creation of a dual system whereby the operator's liability could be covered during an initial period by insurance and subsequent claims would be met by the State itself. Note was taken as well of the solution adopted in Switzerland, where a Fund for Delayed Atomic Injury was established to meet claims for personal injury which becomes apparent after the expiry of the limitation period.

The experts discussed in some detail the concept of nuclear damage; this is defined by the Convention but detailed interpretation remains a question for the lex fori.

The experts discussed the relationship between radiation protection standards and the concept of nuclear damage; although these were primarily

safety standards, they might be taken into consideration by courts in determining liability. For example, they could be used as presumptive evidence or in reversing the burden of proof. It was pointed out that, in this respect, such standards often differed from one State to another in a Federal Union or from one country to another, and that the Agency's efforts to harmonize these standards on a world-wide basis was also of significance in the field of liability.

The experts considered the problem of the definition of "nuclear installation" under the Convention as this has a direct influence on the scope of the operator's liability and it was pointed out that this was closely tied to the system of licensing. The Vienna Convention provides that the Installation State may determine that several nuclear installations of one operator which are located at the same site shall be considered as a single nuclear installation, and this has clear implications with respect to insurance. An aspect of particular importance to developing countries, which might frequently order all or part of an installation from a foreign supplier, was that of liability during construction. Transfer of liability is normally defined in the construction contract, but this can also be affected by the licensing system of the State concerned. If insurance cover were not available in the country, the supplier might ask the purchaser to assume these risks. It was pointed out in this respect that the liability problem was quite distinct before and after the arrival of nuclear material on the site, as it was only in the latter period that a nuclear risk was created.

The experts underlined that in developing countries nuclear installations would usually be owned and operated by the Government itself or by a national public service, and that in many cases insurance cover might not be taken or might be taken to cover only part of the risk. It was pointed out, however, that it might be advantageous even here to envisage the concept of private insurance, particularly as the settlement of claims could be greatly facilitated by insurers. Just as in the context of insurance for material damage, developing countries would be influenced by requirements of foreign exchange as concerns their decision to insure for third party liability risks.

Various solutions for providing cover were discussed, including combinations of private insurance, other types of security and State intervention.

A problem of particular interest, both for third-party liability and material damage risks, is that of insurance costs. It was brought out in discussion that these depend on a great number of factors and that normal statistical methods for determining insurance premiums and the part of the total operating costs they represent were not usable here because of insufficient experience. Various illustrative costs were mentioned but it appears that they cannot be transposed from one installation to another because of the greatly varying circumstances from case to case.

The relationship between the special nuclear third party liability system of the Convention and national provisions concerning public health insurance, workmen's compensation, etc., was mentioned. It was emphasized that this was left to be governed by the relevant national law and that the question should be considered when elaborating national legislation on nuclear liability.

The experts also discussed the organization of nuclear insurance on national and international levels, with particular attention to nuclear insurance pools and problems of re-insurance. Some experts emphasized the difference between the liberty of action of European and United States pools

in contrast to that found in other regions, and also the great difference between the efficiency of organization and the capacity of the insurance market from one country to another. They pointed out that this could have an important influence on the availability of nuclear insurance and on insurance rates.

Discussion also took place on the concept of regional coverage of nuclear damage to third parties where such damage exceeded the amount of compensation available on a national level, and consideration was given to the system created by the 1964 Convention Supplementary to the Paris Convention on Third Party Liability in the Field of Nuclear Energy. It was emphasized that regional coverage should be tied to the basic system of an international convention and should not attempt to create a separate system of liability. The need for a regional system would depend greatly on the number and proximity of nuclear installations in the region. The experts pointed out that establishing a system of regional coverage would present difficult problems for developing countries with greatly differing economic levels.

Consideration was given to the possible harmonization of insurance conditions for nuclear risks. The example was cited of work done in this field by EURATOM, where a skeleton-policy had been elaborated in collaboration with insurers; but this gave only the general framework and each policy must take account of the particular aspects of the case on hand. While recognizing that complete harmonization of insurance conditions might not be feasible, the experts felt that it might be very useful if the Agency were in a position to make available to countries typical insurance policies which could serve as guidance.

The problem of technical (monetary) reserves for nuclear risks was considered, with particular emphasis on taxation of these reserves. It was pointed out that very large reserves were required and that tax rates might differ considerably from country to country; this influenced the pace at which reserves could be established.

III. Consensus was reached on the following general considerations resulting from the deliberations of the experts:

A. Necessity for each country to review all aspects of risks and liabilities early in the development of their nuclear energy program.

B. Even in countries with advanced nuclear programs all problems concerning the coverage of risks have not yet been solved definitely, but reasonably satisfactory solutions have been arrived at in most cases.

C. The Government must ensure that adequate financial coverage exists for third-party liability. This may mean its having to assume part or whole of the financial responsibilities in respect of such coverage. Consideration may have to be given to problems of foreign exchange, particularly where compensation may have to be paid outside the Installation State. With respect to material damage risks, the Government may wish to give special attention to the requirements of foreign exchange concerning the replacement/repair of the imported components of a facility; this would apply regardless of whether the facility was Government owned/operated or privately operated.

D. Certain problems and solutions adopted may differ from one country to another according to legal and socio-economic factors prevailing.

E. The following options should be considered by developing countries:

1. With respect to third-party liability

   (a) Choice of the operator
      (i) the State itself, with no requirement to insure; or
      (ii) a private or State undertaking, but with the requirement to insure or have other financial security.
   (b) Choice of the amount of liability and of the security required of the operator
      (i) insurance; or
      (ii) other private security; or
      (iii) State guarantee; or
      (iv) a combination of the above.
   (c) Choice of the maximum amount of compensation for victims of an incident
      (i) same amount as the liability of the operator; or
      (ii) a higher amount, with State intervention for the difference.
   (d) Compensation of the staff of the nuclear installation
      (i) by social legislation; or
      (ii) by nuclear legislation; or
      (iii) the sum of both legislations.

2. With respect to material damage to the nuclear installation

   (a) Self insurance fund or non-insurance; or
   (b) Commercial insurance coverage.

3. Other problems which must be solved

   (a) State guarantee for the exclusions figuring in insurance policies.
   (b) Re-constitution of insurance in case of an accident.
   (c) Coverage of liability for damage occurring outside the installation,
      (i) during carriage;
      (ii) for nuclear material or contaminated material sent to a facility which is not classified as a "nuclear installation".

RAPPORT DU SECRETARIAT DE L'AIEA

I. Le Groupe d'étude s'est réuni au Siège de l'Agence à Vienne, du 24 au 28 novembre 1969, en vue d'examiner certains problèmes d'assurance nucléaire dans les Etats Membres qui se trouvent au premier stade de leur développement nucléaire. Le programme du Groupe était limité aux problèmes qui se posent lors de la construction et de l'exploitation des centrales nucléaires, notamment en ce qui concerne la responsabilité civile de l'exploitant et l'assurance des choses.

Le Groupe comprenait des experts nommés par le Directeur général sur proposition des gouvernements intéressés, en vue de lui donner des conseils à titre personnel, ainsi que des consultants et d'autres participants. Il était composé comme suit:

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II. DISCUSSIONS

Les experts ont examiné les divers risques inhérents à la construction et à l'exploitation des centrales nucléaires, ainsi que les multiples problèmes relatifs à la garantie financière de ces risques. Les travaux ont essentiellement porté sur les risques nucléaires, mais on a admis également que l'exploitant d'une installation nucléaire devait tenir compte de divers risques non nucléaires; de plus, ces risques peuvent se combiner en cas d'accident.

Par rapport aux risques classiques, les risques nucléaires présentent plusieurs caractéristiques particulières:

i) un seul et même accident peut provoquer un dommage d'une étendue exceptionnelle et de formes très variées;
ii) le nombre des installations nucléaires qui existent déjà ou qui seront construites au cours de ces prochaines années est relativement petit;
iii) le dommage que peut provoquer un accident nucléaire comporte des effets différés.

La discussion a confirmé que les risques nucléaires peuvent se subdiviser en deux catégories générales:

a) Dommage matériel causé à l'installation nucléaire même, et ses conséquences;
b) Dommage causé aux tiers (y compris le personnel); cette catégorie comprend à la fois les lésions corporelles et les dommages aux biens.

La garantie financière de ces risques se présente sous des formes différentes qui peuvent se combiner. Elle varie en fonction du type et de l'étendue du risque, de la valeur de l'installation, de la législation applicable et des moyens financiers. En outre, en ce qui concerne la responsabilité civile et les dommages corporels causés à la personne des employés, elle peut aussi dépendre des conditions établies par les lois et règlements en la matière. Pour ce qui est des dommages matériels causés à l'installation nucléaire, toute garantie financière prend normalement la forme d'une assurance privée. Dans certains cas, toutefois, aucune assurance n'est contractée, soit délibérément, soit parce qu'on ne peut pas obtenir de couverture pour les risques en question. La totalité ou une partie de ces risques demeurera alors à découvert, à moins que l'exploitant ne soit en mesure d'être son propre assureur.

En matière de dommages causés aux tiers, la situation est quelque peu différente car en droit civil, la responsabilité est habituellement illimitée; cependant, lorsque la responsabilité est régie par une convention internationale (Convention de Vienne relative à la responsabilité civile en matière de dommages nucléaires, Convention de Paris sur la responsabilité civile dans le domaine de l'énergie nucléaire) ou par des lois et règlements nationaux spécialement établis à cet effet, elle sera soumise à un régime particulier. En l'absence d'un tel régime, il reste la possibilité théorique de s'«auto-assurer»; lorsque ce régime existe, une «auto-assurance» n'est possible que si l'exploitant de l'installation nucléaire est l'Etat ou une de ses subdivisions. En règle générale, toutefois, c'est à l'assurance privée qu'on demandera de couvrir la responsabilité civile.

Néanmoins, étant donné l'étendue éventuelle de la responsabilité, l'Etat peut être appelé à fournir des garanties sous les formes suivantes:

i) garantie financière exclusive (normalement pour les installations dont l'Etat ou un organisme semi-public est le propriétaire ou l'exploitant);
ii) garantie complémentaire à une assurance contractée, lorsque celle-ci ne couvre pas intégralement la responsabilité de l'exploitant;
iii) garantie supplémentaire, allant au-delà du montant de la responsabilité de l'exploitant.

Dommage matériel

En ce qui concerne le dommage matériel causé à l'installation nucléaire proprement dite et ses conséquences, les experts ont examiné en détail les divers types de risques inhérents à la construction et à l'exploitation des centrales nucléaires. Il a fallu tenir compte à la fois des risques nucléaires et non nucléaires, mais ceux-ci sont souvent étroitement liés. La discussion a fait apparaître qu'une distinction judicieuse entre ces risques, au moyen d'une délimitation des parties «nucléaires» et «non nucléaires» d'une installation nucléaire, permet d'établir un barème qui correspond aux risques propres à chaque bâtiment distinct se trouvant sur l'emplacement de cette installation. On peut ainsi réaliser des économies importantes sur le montant total des primes à verser. On a fait néanmoins ressortir que, dans les cas où plusieurs assurances différentes sont contractées, il faudrait s'efforcer avec soin d'éviter des lacunes dans la couverture; de plus, en

cas de sinistre il pourrait y avoir incertitude au sujet de la police à appliquer. On a fait observer que dans la plupart des pays tous les risques font l'objet d'une seule police (même alors certains risques ne sont évidemment pas couverts), ce qui permet d'éviter les problèmes que pose la différenciation entre les deux catégories de risques lors d'un accident.

La discussion a porté aussi sur le problème spécial de l'assurance contre les risques de panne de machines et d'interruption du courant électrique. On a fait remarquer qu'une assurance peut être facilement contractée pour les zones de radioactivité nulle et qu'il est aussi possible de l'obtenir pour les zones de faible activité, mais que les problèmes sont bien plus délicats pour les zones fortement radioactives.

Pertes indirectes

Lorsqu'un accident provoque l'arrêt d'un réacteur et, dans le cas d'une centrale nucléaire, une interruption de la production d'électricité, cette notion englobe les pertes de revenus ou de bénéfices et les frais généraux permaments. Une garantie de ces pertes devrait s'étendre aux mêmes catégories de risques que la police de base souscrite pour les dommages matériels. La tarification d'une telle garantie est toutefois très difficile.

Les experts ont examiné le problème général de la couverture des dommages matériels du point de vue des pays qui se trouvent aux premiers stades de la production d'énergie d'origine nucléaire. Les centrales nucléaires y seront normalement exploitées par l'Etat même, et le problème est essentiellement d'ordre économique. Les travaux de réparation et de reconstruction exigent des capitaux importants dont le montant doit être placé en regard des coûts d'une garantie d'assurance. Plusieurs experts ont fait ressortir qu'un facteur important dans les pays en voie de développement sera les besoins en devises lorsque l'assurance ou la réassurance doivent être contractées à l'étranger; il en sera de même lorsque des devises sont nécessaires pour construire ou acquérir la totalité ou une partie de l'installation. Si, dans le cas d'un dommage matériel, des pièces de rechange doivent être achetées à l'étranger et payées en devises, il faudra en tenir compte au moment de décider de contracter une assurance.

Responsabilité civile

En ce qui concerne les dommages causés aux tiers, les experts ont estimé que la Convention de Vienne relative à la responsabilité civile en matière de dommages nucléaires constituait une base très satisfaisante pour l'élaboration des législations nationales dans ce domaine et pour la solution des problèmes qui peuvent se poser lorsque, à propos d'un accident nucléaire, des ressortissants de plusieurs pays sont en cause.

Bien que les experts aient reconnu qu'il ne leur appartenait pas de donner aux Etats des conseils à cet égard, ils ont estimé dans l'ensemble qu'on aurait grand avantage à uniformiser les modalités d'application de la Convention de Vienne.

Un des problèmes importants mis en évidence au cours des discussions est celui que pose la constitution d'une garantie de responsabilité. La Convention de Vienne ne prévoit qu'un montant minimal de responsabilité et chaque Etat fixe ce montant pour ses propres exploitants. La responsa-

bilité est établie par accident, mais on a fait ressortir qu'il n'est pas toujours possible d'obtenir une garantie d'assurance sur cette base et que cette garantie n'est éventuellement accordée que par installation et pour une durée déterminée. Il en est ainsi même dans les pays ayant une industrie nucléaire développée, où les éléments d'actif des compagnies d'assurance sont répartis selon un ordre établi; on a fait observer qu'en élaborant une législation dans ce domaine, les pays moins avancés en technologie nucléaire devraient prendre les mesures voulues pour que le montant minimal soit toujours disponible.

La question de la garantie financière a été aussi examinée du point de vue des dommages différés qui ne sont parfois connus que longtemps après l'accident nucléaire. Ce fait a été mis en rapport avec le délai de prescription des demandes en réparation, qui est en principe fixé à dix ans à compter de l'accident nucléaire mais peut être ramené jusqu'à trois ans à compter de la date à laquelle la victime du dommage nucléaire a eu ou aurait dû avoir connaissance de ce dommage et de l'identité de l'exploitant qui est responsable. On a envisagé la création d'un système double en vertu duquel la responsabilité de l'exploitant serait couverte par l'assurance au cours d'une période initiale, puis l'Etat donnerait suite aux actions en réparation intentées ultérieurement. En outre, on a pris note de la solution adoptée en Suisse, où a été créé un fonds pour radiolésions différées destiné à faire face aux demandes en réparation intentées à la suite de lésions apparues après l'expiration du délai de prescription.

Les experts ont procédé à une discussion assez approfondie de la notion de dommage nucléaire; celle-ci est définie dans la Convention, mais l'interprétation appartient à la jurisprudence.

Les experts ont examiné la relation entre les normes de radioprotection et la notion de dommage nucléaire; bien que ces normes soient essentiellement établies à des fins de sécurité, les tribunaux pourraient en tenir compte pour déterminer la responsabilité: ainsi, ils pourraient les utiliser pour établir une présomption de responsabilité ou pour inverser l'obligation de faire la preuve. On a fait observer que sous ce rapport les normes de radioprotection différaient souvent d'un Etat à un autre dans une fédération ou d'un pays à l'autre, et que les efforts de l'Agence pour les uniformiser sur le plan mondial ont également une grande importance en matière de responsabilité civile.

Les experts ont étudié le problème que pose la définition de la notion d'«installation nucléaire» dans le texte de la Convention, en raison de son incidence directe sur l'étendue de la responsabilité d'un exploitant; on a fait ressortir que ce problème est étroitement lié au régime des permis d'exploiter. La Convention de Vienne stipule que l'Etat où se trouve l'installation peut considérer comme une seule installation nucléaire plusieurs installations nucléaires se trouvant sur le même site et dont un même exploitant est responsable; cette disposition a manifestement des incidences en matière d'assurance. Une question d'importance particulière pour les pays en voie de développement qui peuvent être fréquemment amenés à commander la totalité ou une partie d'une installation à un fournisseur étranger est celle de la responsabilité au cours des travaux de construction. Le transfert de la responsabilité est normalement réglé dans le contrat de construction mais peut être également influencé par le régime du permis d'exploiter en vigueur dans l'Etat intéressé. S'il est impossible d'obtenir une garantie d'assurance dans le pays, le fournisseur peut demander à

l'acheteur d'assumer ces risques. On a fait remarquer à cet égard que le problème de la responsabilité est très différent selon qu'il se pose avant ou après l'arrivée de la matière nucléaire sur le site, étant donné qu'un risque nucléaire n'existe qu'à partir de cette date.

Les experts ont souligné que dans les pays en voie de développement, les installations nucléaires appartiennent en règle générale à l'Etat même ou à un organisme public national et sont exploitées par lui, et que très souvent une assurance ne sera pas contractée ou ne couvrira qu'une partie du risque. Cependant, on a fait valoir que même dans ce cas il serait peut-être avantageux d'envisager l'assurance privée, notamment en raison du fait que les assureurs pourraient grandement faciliter le règlement des demandes en réparation. Tout comme pour l'assurance contre les dommages matériels, la décision des pays en voie de développement de s'assurer contre les risques de responsabilité civile sera influencée par les besoins en devises.

Le Groupe a examiné diverses solutions permettant de constituer une couverture, notamment les possibilités de combiner l'assurance privée, d'autres types de garanties et l'intervention de l'Etat.

Un problème d'intérêt particulier tant du point de vue de la responsabilité civile que des dommages matériels est celui des frais d'assurance. La discussion a fait apparaître que ces frais varient en fonction d'un grand nombre de facteurs et le manque d'expérience ne permet pas de faire appel aux méthodes statistiques qui sont normalement utilisées pour déterminer les primes d'assurance et la fraction du montant total des frais d'exploitation qui correspond à ces primes. A titre d'exemple, on a cité divers chiffres, mais il est apparu que ceux-ci ne sauraient être transposés d'une installation à l'autre, les circonstances étant très différentes dans chaque cas.

On a mentionné qu'il existe une relation entre le régime spécial de responsabilité civile en cas d'accidents nucléaires, établi par la Convention, et les dispositions prises à l'échelon national en matière d'assurance maladie, d'assurance contre les accidents du travail, etc. On a souligné que cette question devait rester du ressort du droit national et qu'il faudrait l'examiner lors de l'élaboration d'une législation nationale en matière de responsabilité civile.

Les experts ont aussi discuté de l'organisation de l'assurance nucléaire à l'échelon national et sur le plan international en attachant une attention particulière aux consortiums d'assurance nucléaire et aux problèmes de réassurance. Plusieurs d'entre eux ont souligné l'écart qui existe entre la liberté d'action dont disposent les consortiums d'Europe et des Etats-Unis et celle qu'on peut constater ailleurs, ainsi que la grande différence entre l'efficacité de l'organisation et la capacité du marché des assurances qui existe d'un pays à l'autre. Ils ont fait observer que ce fait pourrait exercer une profonde influence sur les possibilités d'une assurance nucléaire et sur les taux d'assurance.

La discussion a porté encore sur une couverture régionale des dommages nucléaires causés aux tiers lorsque ce dommage dépasse le montant de la réparation pouvant être obtenue sur le plan national; on a examiné le régime créé par la Convention complémentaire de 1964 à la Convention de Paris sur la responsabilité civile dans le domaine de l'énergie nucléaire. On a fait ressortir qu'une couverture régionale devrait se rattacher au régime de base établi par une convention internationale et qu'elle ne devrait pas viser à instituer un régime distinct de responsabilité. La création d'un régime

régional de garanties dépendra grandement du nombre et de la densité des installations nucléaires qui existent dans la région. Les experts ont fait ressortir que l'établissement d'un tel régime régional pose des problèmes complexes aux pays en voie de développement dont la situation économique diffère sensiblement.

Les experts ont examiné la possibilité d'harmoniser les conditions d'assurance contre les risques nucléaires. A titre d'exemple, on a fait état du travail exécuté à cette fin par EURATOM qui a permis d'élaborer une police cadre en collaboration avec les assureurs; cependant, on ne dispose ainsi que d'un cadre général et chaque police doit tenir compte des éléments propres à chaque cas. Tout en reconnaissant qu'une unification complète des conditions d'assurance peut être irréalisable, les experts ont estimé qu'il serait peut-être très utile que l'Agence mette à la disposition des pays intéressés des modèles de polices d'assurance dont ils pourraient s'inspirer.

Le problème des réserves techniques (monétaires) destinées à faire face aux risques nucléaires a été examiné, notamment du point de vue de la taxation de ces réserves. On a fait observer qu'il faut constituer des réserves très importantes et que les taux d'imposition varient considérablement d'un pays à l'autre, ce qui a une incidence sur le rythme de constitution des réserves.

III. Les experts, à l'issue de leurs travaux, sont parvenus aux conclusions générales suivantes:

A. Chaque pays doit examiner les risques et les problèmes de responsabilité sous tous leurs aspects, dès qu'il commence à élaborer un programme nucléo-électrique.

B. Même dans les pays qui exécutent des programmes nucléaires avancés, tous les problèmes posés par la couverture des risques ne sont pas encore définitivement résolus, mais dans la plupart des cas on a pu parvenir à des solutions raisonnablement satisfaisantes.

C. L'Etat doit faire en sorte que la responsabilité civile soit couverte par une garantie financière suffisante. En d'autres termes, il pourrait assumer une partie ou la totalité des charges financières qu'entraîne cette couverture. On devrait examiner les problèmes relatifs aux devises, notamment lorsqu'il peut se révéler nécessaire de payer une indemnité hors du territoire de l'Etat où se trouve l'installation. En ce qui concerne les risques de dommages matériels, les pouvoirs publics voudront peut-être porter une attention particulière aux besoins en devises pour remplacer et réparer les composants importés des installations; cette considération s'applique indifféremment à une installation appartenant à l'Etat ou exploitée par lui et à une installation exploitée à titre privé.

D. Certains problèmes et les solutions adoptées peuvent différer d'un pays à l'autre en fonction des facteurs juridiques et socio-économiques prédominants.

E. Les pays en voie de développement devraient examiner les options suivantes:

1. En matière de responsabilité civile:

   a) Choix de l'exploitant
      i) l'Etat même, qui ne doit contracter aucune assurance;
      ii) une entreprise privée ou entreprise d'Etat, tenue toutefois de contracter une assurance ou une autre garantie financière.
   b) Choix du montant de la responsabilité de l'exploitant et de la garantie requise
      i) assurance;
      ii) autre garantie privée;
      iii) garantie de l'Etat;
      iv) combinaison de ces garanties.
   c) Choix du montant maximal de la réparation à verser aux victimes d'un incident
      i) montant égal à celui de la responsabilité de l'exploitant;
      ii) montant plus élevé, la différence étant à la charge de l'Etat.
   d) Indemnisation du personnel de l'installation nucléaire
      i) au moyen d'une législation sociale
      ii) au moyen d'une législation nucléaire
      iii) au moyen de ces deux législations.

2. En ce qui concerne les dommages matériels causés à l'installation nucléaire:

   a) Fonds d'auto-assurance ou pas d'assurance;
   b) Couverture par une compagnie d'assurance.

3. Autres problèmes à résoudre:

   a) Garantie d'Etat pour les exclusions prévues dans les polices d'assurance;
   b) Reconstitution de la garantie dans le cas d'un accident;
   c) Couverture de la responsabilité en cas de dommage survenant en dehors de l'installation
      i) en cours de transport;
      ii) du fait de matières nucléaires ou de matières contaminées livrées dans une installation qui n'est pas considérée comme une «installation nucléaire».

ДОКЛАД СЕКРЕТАРИАТА МАГАТЭ

I. Совещание экспертов было созвано в Центральных учреждениях Агентства в Вене с 24 по 28 ноября 1969 года с целью изучения и рассмотрения специфических проблем ядерного страхования в государствах-членах, находящихся на начальных стадиях развития в области использования ядерной энергии. Объем работы совещания экспертов был ограничен проблемами, связанными с сооружением и эксплуатацией ядерных электростанций, и упор в работе был сделан, в частности, на ответственность оператора перед третьей стороной и на вопросы страхования имущества.

В совещании участвовали эксперты, назначенные Генеральным директором по предложению соответствующих правительств, задачей которых было дать Генеральному директору рекомендации в рамках своих полномочий, участвовали также консультанты и прочие лица. Состав участников совещания был следующим:

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II. МАТЕРИАЛЫ ОБСУЖДЕНИЙ

Эксперты обсудили различные виды рисков, связанных с сооружением и эксплуатацией ядерных электростанций, а также различные аспекты финансового обеспечения этих рисков. Главное внимание было уделено ядерным рискам, однако в то же время было признано, что и различные неядерные опасности должны учитываться оператором ядерной установки; более того, может иметь место совместное действие этих рисков в случае аварии.

Ядерные риски обладают некоторыми особыми характеристиками по сравнению с обычными рисками:

i) возможность понести ущерб в исключительно крупном масштабе и в самых различных формах в результате единичной аварии;
ii) относительно небольшое количество ядерных установок, которые уже существуют или будут построены в течение последующих нескольких лет;
iii) более поздние воздействия ущерба, которые могут иметь место в результате ядерной аварии.

Обсуждение подтвердило, что ядерные риски можно разделить на две общие категории:

a) Материальный ущерб самой ядерной установке и последствия этого; и
b) Ущерб третьим сторонам (включая персонал); этот вид ущерба охватывает как травмы, нанесенные персоналу, так и ущерб, нанесенный имуществу.

Финансовое обеспечение этих рисков может иметь различные формы или представлять собой сочетание этих форм. Оно будет зависеть от типа и размера риска, стоимости установки, применимого в данном случае права и имеющихся финансовых средств. Более того, что касается ответственности перед третьей стороной и травм, нанесенных персоналу, то такое обеспечение может зависеть также от требований, установленных конкретными законами и правилами в данной области. Что касается материального ущерба, нанесенного ядерной установке, то финансовое обеспечение, если таковое существует, обычно принимает форму частного страхования. В некоторых случаях, однако, страхование не будет производиться либо по выбору, либо из-за того, что не существует для некоторых рисков такого страхования. Так, страхование не будет производиться для всех или части таких рисков, пока оператор не будет в состоянии принять меры по "самострахованию".

Положение в отношении ущерба третьим сторонам несколько отличается, поскольку по общепринятому праву ответственность является обычно неограниченной; но там, где ответственность регулируется Международной конвенцией (Венская конвенция по гражданской ответственности за ядерный ущерб, Парижская конвенция по ответственности перед третьей стороной в области ядерной энергии) и конкретными национальными законами и правилами, она будет согласовываться с положениями специальной системы. Если такой специальной системы не существует, "самострахование" остается теоретической возможностью; если же такая система существует, "самострахование" будет возможно только там, где государство или один из государственных конституционных органов

является оператором ядерной установки. Однако частное страхование является обычно видом финансового обеспечения, призванного покрывать ответственность перед третьей стороной.

Тем не менее, как следствие высокой потенциальной ответственности, связанной с ядерной энергией, в различных формах могут предоставляться государственные гарантии:

i) как единственный тип финансового обеспечения (обычно для установок, оператором которых является государство или которые принадлежат государству, или для установок, оператором или собственником которых являются полуправительственные органы);
ii) как дополнение к страховому обеспечению, когда последнее не охватывает полностью ответственность оператора; или
iii) как дополнительное покрытие, сверх суммы ответственности оператора.

Материальный ущерб

Что касается материального ущерба для самой ядерной установки и последствий этого, эксперты подробно обсудили различные типы рисков, связанных с сооружением и эксплуатацией ядерных электростанций. Следует учитывать как ядерные, так и неядерные риски, однако те и другие часто очень тесно связаны. Обсуждение показало, что тщательное разделение этих рисков посредством разграничения "ядерной" и "неядерной" частей ядерной установки в целях определения норм позволяет создать образец норм, отражающих реальный риск, связанный с отдельными индивидуальными зданиями в пределах территории ядерной установки. Это может привести к значительной экономии в общих страховых премиях. Тем не менее, когда берется несколько различных страховых полисов, подчеркивается необходимость быть особенно внимательным, чтобы избежать пустых мест в обеспечении; кроме того, если произойдет авария, может иметь место некоторая неопределенность в отношении того, какой полис следует применить. Указывалось, что в большинстве стран все такие риски включаются в единый полис (хотя, конечно, некоторые риски не охватываются даже и здесь), что позволяет избежать проблем, связанных с проведением различия между этими двумя видами рисков в случае аварий.

Обсуждались конкретные проблемы страхования на случай рисков поломки механизмов и электросистемы. Выяснено, что страхование легко произвести для зон с нулевой радиоактивностью и что оно может быть представлено также для зон с низкой радиоактивностью. Однако существуют очень серьезные проблемы, связанные с предоставлением такого покрытия для зон с высокой радиоактивностью.

Потери вследствие аварии

Когда авария приводит к остановке реактора и, в случае ядерной электростанции, к остановке выработки электроэнергии, эти потери включают в себя потерю дохода или прибылей и постоянные издержки. Покрытие таких потерь должно будет охватывать те же самые виды рисков, что и основной полис для материального ущерба. Установление ставки такого покрытия, однако, является весьма трудным делом.

Эксперты рассмотрели общую проблему покрытия материального ущерба для стран, стоящих на ранних стадиях производства ядерной энергии. Оператором ядерных электростанций является обычно само государство, и проблема носит в основном экономический характер. Большие капиталовложения связаны с ремонтом и реконструкцией. Они должны быть сбалансированы с расходами на страховое покрытие. Некоторые эксперты подчеркивали, что важным моментом для развивающихся стран будет влияние обмена валюты, если страхование или перестрахование должно осуществляться за границей; этот фактор будет также действовать, если для сооружения или поставки всей или части установки потребуется обмен валюты. В случае с материальным ущербом, если запасные части должны покупаться за границей на иностранную валюту, это может повлиять на решение в отношении необходимости осуществления страхового покрытия.

Ответственность перед третьей стороной

Что касается ущерба третьим сторонам, эксперты согласились, что Венская конвенция по гражданской ответственности за ядерный ущерб является в высшей степени удовлетворительной основой для разработки национального законодательства в данной области, а также для решения проблем, которые могут возникнуть, когда ядерная авария затрагивает граждан более чем одной страны.

Хотя эксперты и согласились в том, что консультирование государств в этом отношении не является их задачей, существует общее мнение, что можно было бы извлечь значительную пользу, если бы удалось достичь некоторой гармонизации в методах применения Венской конвенции.

Одной из главных проблем, которые были подчеркнуты при обсуждении, явилось предоставление страхового покрытия расходов в связи с ответственностью. Венская конвенция устанавливает лишь минимальный размер ответственности, а каждое государство само будет определять его для своих операторов. Ответственность устанавливается на аварию, но указывалось, что страховое покрытие не всегда имеет место на этой основе и может предоставляться лишь по принципу — на установку в течение определенного периода времени; это относится даже к странам с развитой ядерной промышленностью, где страховые статьи были тщательно разработаны; указывалось, что при разработке законодательства в данной области развивающиеся в деле использования ядерной энергии страны должны предусмотреть соответствующие меры для того, чтобы всегда был обеспечен минимальный размер такой ответственности.

Вопрос о покрытии был рассмотрен также в связи с запаздыванием в обнаружении ущерба, который мог оставаться неизвестным в течение длительного времени после ядерной аварии. Это относится также к периоду права давности на представление претензий, которое , в принципе, составляет 10 лет со времени ядерной аварии, но может быть ограничено не менее чем тремя годами от той даты, когда лицо, подвергшееся ущербу, узнало или должно было узнать об ущербе и об операторе, несущем ответственность. Обращалось внимание на создание двойной системы, при которой ответственность оператора может покрываться в течение первоначального периода страховкой, а последующие претензии — самим государством. Отмечалось также решение, принятое в Швейцарии, где

был создан Фонд обеспечения в случае позднего обнаружения атомных травм с целью покрытия расходов по претензиям в связи с травмами персонала, которые стали очевидны по истечении ограничительного срока.

Эксперты рассмотрели некоторые детали концепции о ядерном ущербе; последний определен конвенцией, но подробное толкование остается вопросом lex fori.

Эксперты рассмотрели вопросы согласования между нормами радиационной защиты и концепцией о ядерном ущербе; хотя эти нормы являются главным образом нормами обеспечения безопасности, они могут быть учтены судами при определении ответственности. Например, они могут использоваться как в качестве предполагаемого свидетельства, так и при отмене бремени доказывания. Указывалось, что в этом отношении такие нормы часто имеют различные значения в различных составных частях федеративного государства или в различных странах и что усилия Агентства по гармонизации этих норм в области ответственности во всемирном масштабе также приобретают важное значение.

Эксперты рассмотрели проблему определения "ядерной установки" согласно указанной конвенции, поскольку это оказывает непосредственное влияние на объем ответственности оператора. Указывалось, что данная проблема тесно связана с системой лицензирования. Венская конвенция предусматривает, что государство, где находятся установки, может принять решение о том, что несколько ядерных установок одного оператора, которые находятся на одной и той же площадке, будут рассматриваться как единая ядерная установка. Такое решение будет иметь непосредственное отношение к страхованию. Аспектом особой важности для развивающихся стран, которые часто могут заказывать всю или часть установки у иностранного поставщика, является ответственность в ходе строительства. Передача ответственности обычно определяется в контракте на строительство, но на решение этого вопроса может также влиять система лицензирования, существующая в данном государстве. Если в данной стране страхового покрытия не существует, поставщик может просить покупателя принять эти риски на себя. В этом отношении было указано, что проблема ответственности является вполне определенной до и после прибытия ядерного материала на площадку, поскольку ядерный риск возникает лишь в более поздний период.

Эксперты подчеркивали, что в развивающихся странах ядерные установки обычно принадлежат и эксплуатируются самим государством или национальным гражданским органом и что во многих случаях страхование может не производиться или производиться частично для покрытия расходов лишь части риска. При этом указывалось, что, вероятно, будет выгодно даже здесь предусмотреть возможность частичного страхования,особенно потому, что страховые компании в значительной степени содействуют разрешению претензий. Как в связи со страхованием на случай материального ущерба, так и в данном случае развивающиеся страны будут испытывать влияние требований, предъявляемых к обмену валюты, так как это будет касаться их решения осуществить страхование в отношении рисков ответственности перед третьей стороной.

Рассмотрены различные виды решений, связанных с обеспечением покрытия, включая сочетание частичного страхования, других видов обеспечения и участия государства.

Особый интерес как в связи с риском ответственности перед третьей стороной, так и в связи с материальным ущербом представляет пробле-

ма страховых расходов. В обсуждении отмечалось, что последние зависят от ряда факторов и что обычные статистические методы для определения страховых премий и части общих оперативных расходов, которые они представляют, нельзя использовать здесь из-за недостатка опыта. Приводились различные показательные расходы, однако представляется, что они не могут быть перенесены с одной установки на другую в связи с огромным разнообразием обстоятельств, встречающихся в различных случаях.

Упоминалось о зависимости между специальной системой ответственности перед третьей стороной в ядерной области согласно Конвенции и национальными положениями, касающимися социального страхования по болезни, компенсации персоналу и т. д. Подчеркивалось, что эта сторона дела регулируется соответствующим национальным законом и что этот вопрос должен быть рассмотрен при разработке национального законодательства по ядерной ответственности.

Эксперты рассмотрели также вопросы организации ядерного страхования на национальном и международном уровнях, уделив особое внимание ядерным страховым пулам и проблемам перестрахования. Некоторые эксперты подчеркивали разницу между свободой действия пулов в Европе и Соединенных Штатах Америки и в других районах, а также большую разницу между эффективностью организации и емкостью страхового рынка в различных странах. Они указали, что это может оказать значительное влияние на возможность ядерного страхования и на страховые ставки.

Состоялось также обсуждение концепции регионального покрытия ядерного ущерба для третьих сторон, когда такой ущерб превышает размер компенсации, которую может выплатить одно государство. В связи с этим была рассмотрена система, учрежденная Дополнением Конвенции 1964 года к Парижской конвенции об ответственности перед третьей стороной в области ядерной энергии. Подчеркивалось, что региональное покрытие должно быть связано с основной системой международной конвенции и не должно претендовать на создание отдельной системы ответственности. Потребность в региональной системе будет в значительной степени зависеть от количества и близости ядерных установок в данном районе. Эксперты указали, что создание системы регионального покрытия выдвинет трудные проблемы для развивающихся стран, находящихся на весьма различных уровнях экономического развития.

Рассмотрены вопросы возможной гармонизации условий страхования против ядерных рисков. В качестве примера приводилась работа, проделанная в этой области Евратомом, где в сотрудничестве со страховыми компаниями был разработан примерный полис; однако последний дает лишь общие рамки, а в каждом конкретном полисе следует учитывать конкретные аспекты данного случая. Признавая, что полная гармонизация условий страхования может оказаться недостижимой, эксперты сочли, что может быть весьма полезно, если Агентство сможет представить странам типовые страховые полисы, которые могут служить в качестве руководства.

Рассмотрена проблема технических (валютных) резервов для ядерных рисков, с особым упором на таксацию этих резервов. Указывалось, что потребуются очень большие резервы и что налоговые ставки в различных странах могут значительно отличаться друг от друга; это влияет на темпы создания таких резервов.

III. В результате выражения экспертами своих точек зрения было достигнуто согласие в отношении следующих общих положений:

A. Необходимость для каждой страны сделать обзор всех аспектов рисков и видов ответственности на ранней стадии осуществления их программы использования ядерной энергии.

B. Даже в странах, развитых в области использования ядерной энергии, все проблемы, относящиеся к покрытию рисков, еще не нашли определенного решения, но в большинстве случаев достигнуты довольно удовлетворительные решения.

C. Правительство должно обеспечить соответствующие финансовые покрытия расходов в связи с ответственностью перед третьей стороной. Это может означать, что оно примет часть или всю финансовую ответственность в отношении такого покрытия расходов. Могут быть рассмотрены проблемы обмена валюты, особенно тогда, когда компенсация, возможно, будет выплачиваться за пределами государства, в котором находится установка. Что касается рисков материального ущерба, правительство, возможно, пожелает уделить особое внимание требованиям обмена валюты в связи с заменой/ремонтом импортированных составных частей установки; это положение применяется независимо от того, является ли правительство собственником или оператором установки, или оператором установки является частное лицо.

D. Некоторые проблемы и принятые решения могут в различных странах отличаться друг от друга, в соответствии с превалирующими юридическими и социально-экономическими факторами.

E. Развивающиеся страны должны рассмотреть следующие возможности:

1. В отношении ответственности перед третьей стороной
   a) Выбор оператора
      i) Само государство, без необходимости страхования; или
      ii) Частное или государственное предприятие, но с обязательным страхованием или наличием другого финансового обеспечения.
   b) Выбор размера необходимых видов ответственности и обеспечения со стороны оператора
      i) страхование; или
      ii) другое частное обеспечение; или
      iii) государственная гарантия; или
      iv) сочетание вышеуказанных требований.
   c) Выбор максимального размера компенсации для жертв аварии
      i) тот же размер, что и ответственность со стороны оператора; или
      ii) бóльший размер, с доплатой разницы государством.
   d) Компенсация персоналу ядерной установки
      i) путем социального законодательства; или
      ii) путем ядерного законодательства; или
      iii) суммарные действия того и другого законодательства.

2. В отношении материального ущерба для ядерной установки
   a) фонд самострахования или отсутствие страхования; или
   b) коммерческое страховое покрытие.
3. Другие проблемы, которые должны быть решены:
   a) государственная гарантия для исключений, фигурирующих в страховых полисах;
   b) повторное учреждение страхования в случае аварии;
   c) покрытие расходов в связи с ответственностью за ущерб, имевший место вне установки:
      i) при перевозке;
      ii) для ядерного делящегося вещества или загрязненного вещества, отправленного на установку, которая не классифицируется как "ядерная установка".

INFORME DE LA SECRETARIA DEL OIEA

I. El Grupo se reunió en la Sede del Organismo (Viena) del 24 al 28 de noviembre de 1969, con objeto de estudiar y revisar determinados problemas de los seguros nucleares que se plantean en los Estados Miembros que se encuentran en las primeras fases de su desarrollo nuclear. Los trabajos del Grupo se circunscribieron al estudio de esos problemas en relación con la construcción y explotación de centrales nucleares, y versaron particularmente acerca de la responsabilidad civil del explotador y las cuestiones relativas al seguro de bienes.

El Grupo estaba constituido por expertos designados por el Director General, a propuesta de los Gobiernos interesados, para que le asesorasen a título personal, así como por asesores y otros participantes. Su composición fue la siguiente:

EXPERTOS

PRESIDENTE: Sr. Tauno SUONTAUSTA

Sr. Armando D. ANSALDO
Asesor Jurídico Principal Interino,
Comisión de Seguros (Filipinas)

Sr. P.N. KRISHNAMOORTHY
Comisión de Energía Atómica (India)

Sr. Jorge MARTINEZ FAVINI
Jefe del Departamento Jurídico,
Comisión Nacional de Energía Atómica (Argentina)

Sr. Eduardo ORTIZ-MONASTERIO
Asesor Jurídico,
Comisión Nacional de Energía Nuclear (México)

Sr. Dumitru NEGREA
Agregado, Ministerio de Relaciones Exteriores
(Rumania)

Sr. Ik Soo PARK
Comisario de Energía Atómica,
Ministerio de Ciencia y Tecnología,
Oficina de Energía Atómica (República de Corea)

Sr. Alcyr CABRAL SIMÕES
Comisión Nacional de Energía Nuclear (Brasil)

Sr. Tauno SUONTAUSTA
Presidente de la Comisión Finlandesa de Legislación
sobre Responsabilidad Nuclear,
Federación Finlandesa de Compañías de Seguros
(Finlandia)

bien porque no se pueda contratar un seguro para cubrir dichos riesgos. En tales casos no habrá cobertura de seguro para la totalidad o para parte de los riesgos, a menos que el explotador se encuentre en condiciones de establecer un régimen de « autoseguro » .

Por lo que respecta a los daños a terceros, la situación es bastante distinta ya que, conforme al sistema jurídico anglosajón, la responsabilidad suele ser ilimitada; no obstante, cuando la responsabilidad se rige por convenio internacional (Convención de Viena sobre Responsabilidad Civil por Daños Nucleares, Convenio de París acerca de la Responsabilidad Civil en Materia de Energía Nuclear) y por leyes y reglamentaciones nacionales específicas, estas cuestiones se regularán mediante un régimen especial. De no existir tal régimen, queda como posibilidad teórica la modalidad del «autoseguro»; de existir tal régimen especial, el «autoseguro» sólo puede ser de aplicación en los casos en que el Estado o una de sus divisiones constitutivas exploten la instalación nuclear. La contratación de un seguro privado constituye el tipo de garantía financiera que usualmente se busca para cubrir la responsabilidad civil.

Sin embargo, en vista de la enorme responsabilidad a que puede dar lugar un accidente en esta esfera, se pueden dar diversos tipos de garantía estatal:

i) como modalidad única de garantía financiera (normalmente cuando se trate de instalaciones que posea o explote el Estado o una entidad semigubernamental);
ii) como complemento de la cobertura del seguro, cuando éste no cubra totalmente la responsabilidad del explotador;
iii) como cobertura adicional, aparte y por encima de la responsabilidad del explotador.

Daños materiales

Por lo que respecta a los daños materiales sufridos por la instalación nuclear propiamente dicha y a las consecuencias de esos daños, los expertos discutieron detenidamente los diversos tipos de riesgo que entraña la construcción y explotación de centrales nucleares. Se convino en que era preciso tener en cuenta los riesgos tanto nucleares como los no nucleares, que a menudo están estrechamente relacionados entre sí. La discusión puso de manifiesto que una distinción cuidadosa entre estos riesgos, efectuada mediante una delimitación de las dependencias «nucleares» y «no nucleares» de una instalación nuclear, permite reflejar en la tarificación los riesgos reales que corresponden a los distintos edificios situados dentro del recinto de una instalación nuclear. Este permitiría obtener considerables economías en el importe total de las primas de seguro. No obstante, en los casos en que se suscriban pólizas por separado será preciso poner gran cuidado en evitar que la cobertura resulte incompleta; además, en caso de accidente podrían plantearse dudas acerca de la póliza que hubiera de aplicarse, de haber alguna. Se señaló que en la mayoría de los países se incluyen todos estos riesgos en una póliza única (si bien, y como es natural, incluso en estos casos quedan sin cubrir determinados riesgos), con lo que se evitan los problemas que plantea la diferenciación entre los dos tipos de riesgo en caso de accidente.

Los expertos discutieron el problema especial que plantea el seguro de los riesgos de avería en la maquinaria y de cortes en el suministro de energía eléctrica. Se puso de manifiesto que era fácil contratar un seguro, para las zonas de radiactividad nula de una instalación, e incluso para las zonas de baja radiactividad, pero que en las zonas de elevada radiactividad se tropezaba con problemas de seguro muy complejos.

Pérdidas indirectas

Las pérdidas indirectas sufridas cuando, como consecuencia de un accidente, es preciso parar el reactor o interrumpir el suministro de la electricidad producida por una central nuclear, comprenden las pérdidas de ingresos o de beneficios, así como los gastos que hay que seguir pagando. La cobertura de estas pérdidas debería extenderse a los mismos tipos de riesgo previstos en la póliza general suscrita para los daños materiales. No obstante, resulta muy difícil tarifar esta cobertura.

Los expertos examinaron el problema general del mantenimiento de una cobertura para los daños materiales en los países que se encuentran en las fases iniciales de sus programas de producción de energía nucleoeléctrica. En general, las centrales nucleares las explotará el propio Estado, por lo que el problema tiene un carácter principalmente económico. Ahora bien, los trabajos de reparación y de reconstrucción exigen importantes inversiones de capital, cuya cuantía habrá de examinarse comparándola con el importe de los gastos de la cobertura del seguro. Varios expertos señalaron que una cuestión importante para los países en desarrollo es la disponibilidad de divisas en los casos en que sea preciso contratar un seguro o un reaseguro en el extranjero; lo mismo cabe decir en los casos en que se requieran divisas para la construcción o el suministro de la totalidad o de parte de la instalación. Si en caso de producirse daños materiales fuera preciso adquirir en el extranjero las piezas de repuesto pagándolas en divisas, esto podría influir en la decisión de concertar o no un seguro.

Responsabilidad civil

Por lo que respecta a los daños a terceros, los expertos coincidieron en que la Convención de Viena sobre Responsabilidad Civil por Daños Nucleares constituía una buena base para las disposiciones legislativas nacionales en esta esfera, así como para resolver los problemas que pudieran plantearse cuando un accidente nuclear afecte a nacionales de más de un país.

Aunque los expertos convinieron en que no les competía el asesorar a los Estados a este respecto, se estimó, en general, que podrían conseguirse considerables ventajas si fuera posible lograr cierta armonización en cuanto a la forma de aplicar la Convención de Viena.

Uno de los principales problemas subrayados en el curso de las discusiones fue el del establecimiento de una cobertura de la responsabilidad. La Convención de Viena establece únicamente un importe mínimo de la responsabilidad y deja que cada Estado fije el límite de ese importe para sus propios explotadores. El importe de la responsabilidad se establece para cada accidente, pero en la discusión señaló que no siempre puede disponerse de una cobertura en forma de seguro mantenida sobre esa base y

que es posible que la cobertura sólo sea «por instalación» durante cierto período de tiempo; así ocurre incluso en países que cuentan con industrias nucleares muy desarrolladas, en los que se agrupan las pólizas de seguro. Los expertos señalaron que, al elaborar su legislación en esta esfera, los países en desarrollo en materia nuclear deben prever el establecimiento de medidas adecuadas para garantizar la disponibilidad en todo momento de la cantidad mínima fijada.

También se examinó la cuestión de la cobertura respecto de los daños retardados que tal vez no lleguen a conocerse hasta mucho tiempo después de producirse el accidente nuclear. El estudio de esta cuestión estuvo también relacionado con el del plazo de prescripción del derecho a reclamar indemnizaciones, el cual, en principio, es de 10 años a contar desde la fecha en que se produjo el accidente pero puede quedar limitado a tres años como mínimo a partir de la fecha en que la víctima de los daños tuvo o hubiera debido tener conocimiento de dichos daños y del explotador responsable. Se prestó atención a la posibilidad de establecer un sistema mixto en cuya virtud la responsabilidad del explotador quedara cubierta por el seguro durante un período inicial, encargándose posteriormente el propio Estado de atender las reclamaciones de indemnización que puedan seguirse presentando. También se tomó nota de la fórmula adoptada en Suiza, en donde se ha establecido un Fondo para la indemnización de daños atómicos retardados a fin de atender las reclamaciones de indemnización relativas a daños corporales que se manifiesten después de prescrito el plazo de reclamación.

Los expertos discutieron con detenimiento el concepto de daños nucleares; este concepto se define en la Convención pero su interpretación detallada sigue siendo una cuestión de lex fori.

Se discutió acerca de la relación entre las normas de protección radiológica y el concepto de daños nucleares; si bien aquéllas son, principalmente, normas de seguridad, muy bien pudieran ser tenidas en cuenta por los tribunales al determinar la responsabilidad; por ejemplo, podrían utilizarse como presunción de culpabilidad o para invertir la obligación de la prueba. A este respecto se señaló el hecho de que, con frecuencia, esas normas difieren de un país a otro e incluso de un Estado a otro dentro de una misma Federación, y que los esfuerzos que el Organismo realiza para armonizarlas en el plano mundial tienen también importancia en la esfera de la responsabilidad.

Los expertos examinaron el problema de la definición del concepto de «instalación nuclear» según la Convención, ya que su interpretación influye directamente sobre el alcance de la responsabilidad del explotador, señalándose que esta cuestión está estrechamente relacionada con el sistema de concesión de licencias. La Convención de Viena establece que el Estado de la instalación podrá determinar que se considere como una sola instalación nuclear a varias instalaciones nucleares de un solo explotador que estén ubicadas en un mismo lugar, y esta disposición tiene evidentes repercusiones con respecto al seguro. Una cuestión de particular importancia para los países en desarrollo, que con frecuencia habrán de encargar la totalidad o parte de una instalación a un suministrador extranjero, es la relativa a la responsabilidad durante los trabajos de construcción. Normalmente, el traspaso de la responsabilidad se estipula en el contrato de construcción, pero también en este caso puede influir el tipo de sistema de concesión de licencias empleado por el Estado interesado. De no poder obtenerse en el país un seguro, es posible que el suministrador pida al comprador que

asuma la responsabilidad de esos riesgos. Se señaló, a este respecto, que el problema de responsabilidad planteado era totalmente distinto antes y después de la llegada de los materiales nucleares al recinto de la instalación, y que solamente después de su llegada nacía el riesgo nuclear.

Los expertos subrayaron el hecho de que, por lo general, en los países en desarrollo las instalaciones nucleares serán propiedad del Estado o serán explotadas por él o por una empresa nacional de servicio público, y que en muchos casos no se concertará un seguro o sólo se contratará para cubrir parte de los riesgos. Se señaló, sin embargo, que también en este caso podría ser ventajoso prever la posibilidad de recurrir al seguro privado, especialmente si se tiene en cuenta que los aseguradores podrían facilitar considerablemente la resolución de las reclamaciones de indemnización. Lo mismo que en el caso del seguro de daños materiales, en la decisión que adopten los países en desarrollo para asegurarse contra los riesgos de responsabilidad civil influirán sus necesidades en materia de divisas.

En la reunión se examinaron diversas soluciones para el mantenimiento de la cobertura, incluidas diversas combinaciones de seguro privado, otros tipos de garantía e intervención estatal.

Un problema de particular interés, tanto en lo que respecta a la responsabilidad civil como a los riesgos de daños materiales, es el del costo del seguro. En la discusión se puso de manifiesto que su costo depende de gran número de factores y que, por falta de experiencia, no es posible emplear los métodos estadísticos usuales para determinar las primas y la parte que a éstas corresponde en los gastos totales de explotación. Se dieron varios ejemplos de precios de seguro, pero es evidente que los de una instalación no valen para otra debido a las circunstancias tan distintas que concurren en cada caso particular.

Se hizo mención también de las relaciones entre el régimen especial de responsabilidad civil por daños nucleares establecido por la convención y los regímenes nacionales de seguro de enfermedad, accidentes del trabajo, etc. Se subrayó que esta cuestión dependía de la legislación nacional pertinente y que se debe examinar cuando se elaboren medidas legislativas nacionales de responsabilidad civil.

Los expertos examinaron también la cuestión de organizar un régimen de seguros nucleares en el plano nacional o en el internacional, prestando particular atención a los consorcios de seguros y a los problemas del reaseguro. Varios expertos subrayaron la diferencia entre la libertad de acción de que gozan los consorcios de seguros en Europa y en los Estados Unidos y la que existe en otras regiones, así como la gran diferencia existente, entre los diversos países, en lo que se refiere a la eficacia de la organización y a la capacidad del mercado de seguros, señalando que esto podría influir mucho en la oferta de seguros nucleares y en el importe de las primas.

Los expertos examinaron también la posibilidad de establecer una cobertura regional de los daños nucleares a terceros cuando la cuantía de esos daños exceda del fondo de indemnización disponible al nivel nacional, y se prestó prestó atención al régimen establecido por el Convenio complementario del Convenio de París acerca de la Responsabilidad Civil en Materia de Energía Nuclear. Se subrayó que la cobertura regional debía estar en consonancia con el régimen básico establecido por convenio internacional, y no tratar de crear un régimen diferente de responsabilidad. La necesidad de establecer un régimen regional dependerá en gran medida del número de instalaciones nucleares existentes en la región y de la distancia a que estén. Los

expertos señalaron que el establecimiento de un régimen regional de cobertura plantearía difíciles problemas para los países en desarrollo que estén a muy distinto nivel económico.

Se prestó atención a la posibilidad de armonizar las condiciones del seguro de riesgos nucleares. Se citó como ejemplo la labor realizada en esta esfera por la EURATOM, la cual ha preparado, en colaboración con las compañías aseguradoras, una especie de póliza tipo; no obstante, este modelo de póliza constituye únicamente una base general, y al suscribir cada póliza es preciso tener en cuenta las circunstancias particulares de cada caso. Aun reconociendo que tal vez no sea posible llegar a una armonización completa de las condiciones del seguro, los expertos estimaron que posiblemente sería útil que el Organismo facilite a los países datos sobre las pólizas usuales, para que puedan servirles de orientación.

Se examinó el problema de la constitución de fondos de reserva técnica (o sea, monetaria) para cubrir riesgos nucleares, y en especial la imposición fiscal de esas reservas. Se señaló que era preciso disponer de reservas muy grandes y que la política fiscal podría diferir mucho de un país a otro, lo que influía en el ritmo con que podrán crearse esos fondos de reserva.

III. Hubo acuerdo general entre los expertos sobre las siguientes conclusiones a las que llegaron en el curso de las discusiones:

A. Es necesario que cada país estudie todas las cuestiones de riesgo y responsabilidad cuando su programa de energía nuclear se encuentre aún en una etapa inicial.

B. Incluso en países que van muy adelantados en la ejecución de programas nucleares no ha sido posible todavía resolver de manera definitiva todos los problemas de cobertura de riesgos, aunque en la mayoría de los casos se ha llegado a soluciones razonablemente satisfactorias.

C. Los Gobiernos tienen que garantizar que hay una cobertura financiera adecuada de la responsabilidad civil. Esto quizá les obligue a asumir la totalidad o parte de la responsabilidad financiera de tal cobertura. Posiblemente habrá que tener en cuenta, a este respecto, el problema de las divisas, en particular cuando proceda abonar una indemnización fuera del Estado de la instalación. En lo que respecta a los riesgos de daños materiales, es posible que los Gobiernos se interesen especialmente por la cuestión de las divisas necesarias para reemplazar o reparar componentes importados para una determinada instalación; esto se aplica tanto a las instalaciones estatales explotadas por el propio Estado como a las explotadas por un particular.

D. Algunos problemas y las fórmulas adoptadas para resolverlos pueden diferir de un país a otro según los factores jurídicos y económico-sociales imperantes.

E. Los países en desarrollo deben examinar las siguientes posibilidades de opción:

1. Por lo que respecta a la responsabilidad civil:

   a) Elección del explotador:
      i) el propio Estado, sin obligación de concertar un seguro;
      ii) una empresa privada o estatal, a condición de que establezca un seguro u otra garantía financiera.
   b) Determinación del grado de responsabilidad y de la cuantía de la garantía exigible al explotador:
      i) seguro;
      ii) otra garantía de índole privada;
      iii) garantía estatal;
      iv) combinación de cualquiera de las modalidades anteriormente indicadas.
   c) Determinación de la cantidad máxima de la indemnización a las víctimas de un accidente:
      i) una cantidad igual a la que corresponda a la responsabilidad del explotador;
      ii) una cantidad superior, supliendo el Estado la diferencia.
   d) Indemnización del personal de la instalación nuclear:
      i) mediante el régimen de seguros sociales;
      ii) mediante la legislación nuclear;
      iii) mediante la aplicación conjunta de las dos fórmulas anteriores.

2. Por lo que respecta a los daños materiales sufridos por una instalación nuclear:

   a) Fondo de autoseguro, o sin seguro;
   b) Seguro comercial.

3. Otros problemas que es preciso resolver:

   a) Garantía del Estado respecto de las exclusiones que figuren en las pólizas de seguros;
   b) Restablecimiento del seguro en caso de accidente;
   c) Cobertura de la responsabilidad respecto de los daños que se produzcan fuera de la instalación:
      i) durante las operaciones de transporte;
      ii) respecto de los materiales nucleares o de materiales contaminados enviados a una instalación que no esté comprendida dentro de la definición de «instalación nuclear».

THIRD PARTY LIABILITY
The international legal framework and its transposition into national legislation

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INTRODUCTION

This is an introductory lecture only. As a simple lawyer I shall not go into esoteric details of the insurance aspect of nuclear law about which others are far better qualified to speak than I. Nor do I propose to make any attempt to explain the reasons which led to the formulation of the Vienna Convention. I have been asked to explain how that Convention has been transposed into national legislation and any attempt to do this will be sufficiently lengthy of itself.

Coming now to the Convention I do not propose to go through it Article by Article. That again would take far too long. The most satisfactory way, I think, is to extract the main principles of the Convention and attempt to show how each one has been transposed into the UK legislation which is the only national legislation with which I am competent to deal.

NATURE AND EXTENT OF LIABILITY

The first main principle relates to the nature and extent of the liability imposed by the Convention. It is a strict liability, though notwithstanding the wording of Article IV (1), it is not in fact absolute. This becomes clear when you look at Article IV as a whole. Thus paragraph (3) excludes liability for nuclear damage caused by a nuclear incident due to an act of armed conflict or civil war and leaves to the Installation State the option of deciding whether or not to exclude also nuclear damage caused by a nuclear incident due to a grave natural disaster of an exceptional character. Again the effect of paragraphs (5) and (6) of Article IV is to exclude from liability nuclear damage to the nuclear installation itself and to any property on the site of the installation which is used or to be used in connection with the installation and to give the Installation State the option of deciding whether or not to exclude also nuclear damage to the means of transport being used for the nuclear material involved at the time of the nuclear incident. I would also draw attention to paragraph (2) which provides for another option.

This, however, is not granted to the Installation State but to the law of the forum. Under it the competent court may, if its law so provides, relieve the operator of a nuclear installation from his obligation to pay compensation to a claimant where the nuclear damage was caused by his gross negligence or an act or omission of his done with intent to cause damage.

Now how have these provisions been transposed into UK law? The relevant statutes are the Nuclear Installations Acts 1965 and 1969 and they follow the system adopted by the draftsmen of the Convention in laying down a general rule of absolute liability and then qualifying it by making the appropriate exceptions. There is, however, no exemption covering grave natural disasters of an exceptional character (see section 13(4)(b) of the 1965 Act). This was not thought to be necessary owing to the good fortune of the United Kingdom in not being subject to major earthquakes and similar disasters, but obviously this is an option which is likely to be exercised differently by different countries depending on the circumstances. Nor is damage to the means of transport exempted and the requirements of Article IV(6) are duly set out in section 21(1) of the 1965 Act as amended by section 2(1) of the 1969 Act. This decision to include damage to the means of transport was considered necessary in the interests of facilitating the carriage of nuclear material, and it is interesting to note that the OECD Steering Committee has recommended that all signatories to the Paris Convention should exercise this option so as to include damage to the means of transport. On the other hand the option to allow relief in cases of gross negligence has been exercised. Since, however, the Common Law countries do not recognize gross negligence as such you will not find these words in the statute but equivalent provision has been included in section 13(6) of the 1965 Act.

As to the kind of damage that is covered the definition of "nuclear damage" in Article I(1)(k) includes further options. Sub-paragraph (i) sets out the damage which is always covered by the Convention. Sub-paragraph (ii) permits the law of the forum to include other damage subject to the condition that it must arise out of and result from the radioactive properties or a combination of those properties and toxic, explosive or other hazardous properties of nuclear fuel, radioactive products or waste or nuclear material in the same way as sub-paragraph (i) provides for the ordinary case. Then sub-paragraph (iii) gives the Installation State the option of including also injury or damage arising out of or resulting from other ionizing radiations emitted from inside a nuclear installation.

In providing for the kind of damage to be covered the United Kingdom has exercised this second option as can be seen from section 7(1)(b) of the 1965 Act. This was decided to be necessary in order to avoid possibly serious difficulties in establishing the true source of radiation damage when more than one source in a nuclear installation might be involved.

The Convention also provides in Article 1(2) that an Installation State may exclude from the application of the Convention small quantities of nuclear material if the small extent of the risks involved warrants it subject to limits established by the Board of Governors. The 1965 Act provides for this by giving power to the Ministers concerned to make regulations setting out exclusions from the definition of "nuclear matter" as will be seen from the definitions of "exempted matter", "nuclear matter" and "prescribed" in section 26(1) of the 1965 Act, and the definition of "exempted matter" covers the case where another Installation State has made use of the option provided in Article I(2).

This brings me to the question of definitions. From what I have just said it is clear that the UK law has not just set out the definitions contained in Article I of the Convention. Indeed to have done so would not have had the result required owing to the fact that, as I have explained, the definitions

contain options which may or may not be exercised. It might therefore have been expected that I would explain in detail how the effect of Article I has been attained in the UK statutes. This, however, to be frank, would be something which I do not think I could successfully achieve in a short lecture like this. The UK statutes are very far from easy to follow even for my own countrymen so I hope it will be understood if I do not go into detailed explanations which might, in the ordinary way, have been expected.

I must, however, refer to the definition of "nuclear installation". The 1965 Act does contain such a definition but it is not really comparable with that contained in Article I(1)(i). The effect of the UK definition is to include reactors but to leave it to the Ministers responsible to provide in regulations what other installations are to be included. This has the advantage of giving the Government wide discretion as to what to include. Of course all installations covered by the definition in Article I of the Convention must be included but should other installations, not covered by the Convention, in the opinion of the Government be sufficiently dangerous to warrant it, they also can be included provided that they come within the descriptions set out in section 1(1)(b) of the 1965 Act. At the same time by section 1(2) Ministers are empowered to exempt an installation provided that it does not come within the definition in the Convention. In this way we have been able to obtain considerable flexibility in applying the Act which is a great advantage.

CHANNELLING OF LIABILITY

I now come to the principle that all liability should be channelled on to one person, the operator of the nuclear installation. This is the general rule though one finds exceptions when one comes to consider nuclear incidents arising in the course of transport of nuclear material. But the question of transport has its own peculiar difficulties and it is dealt with below. No difficulty arises in transposing the provisions for the channelling of liability but the question of who is the operator is left by the definition of "operator" in Article I(c) to be decided by the Installation State. So far as the United Kingdom is concerned, the 1965 Act covers three different kinds of UK operators.
These are:

(1) Government Departments;
(2) The Atomic Energy Authority; and
(3) Any other operator who has to obtain a licence from the Minister of Technology.

The reasons for this are that the strict control over operators, which is necessary in the interests of safety, is to be found in the licensing provisions of the Act but these are not considered necessary for Government Departments or the Atomic Energy Authority which have their own expertise in safety matters. I shall not explain at length the licensing provisions, as other countries have adopted other systems, but I would draw your attention to the fact that under the UK system it is the site of the installation and not the installation itself which is licensed. This, we have found, has several advantages.

AMOUNT OF LIABILITY

Article V of the Convention leaves the amount of the liability of the operator to the Installation State subject to the proviso that it may not be less than 5 million dollars per nuclear incident. The UK law in section 16(1) of the 1965 Act provides a limit of 5 million pounds for UK operators. But further provisions are made in sections 16 and 18 in case there should be an incident causing a major disaster. These sections preserve the system found in the old Nuclear Installations (Licensing and Insurance) Act 1959 under which all established claims falling within the jurisdiction of the United Kingdom are paid in full. If the 5 million pound limit is exceeded, claims are to be made to the appropriate Minister instead of to the operator, and, to ensure compliance with the provisions of the Paris Supplementary Convention, section 18 as amended by the 1969 Act provides that there shall be made available out of moneys provided by Parliament sums sufficient to ensure, taking into account any contributions received from other countries parties to that Convention, that all claims up to 50 million pounds are satisfied. Any claims still not satisfied, it is provided by section 16(3) of the 1965 Act, are to be met to such extent and out of funds provided by such means as Parliament may determine.

It should be noted that these provisions apply equally to UK and foreign operators but they apply only when the UK courts have jurisdiction. When, however, the Paris Supplementary Convention comes into operation 50 million pounds is to be made available in cases to which the Convention applies, even when the courts of another state have jurisdiction where a UK operator is liable.

COVER FOR LIABILITY

Article VII of the Vienna Convention provides that the operator shall be required to maintain insurance or other financial security to cover his liability, the type and terms being matters for the Installation State. This has in practice led to difficulties because, while liability under the Convention is on a per-incident basis, insurance cover, for reasons which I have no doubt will be explained elsewhere, is not available per incident but per installation for a fixed period of time. Various States have made different provisions to get over this difficulty. Thus, Switzerland, I understand, has provided that the operator must reconstitute the original guarantee in full whenever payments by the insurer reach one-tenth of the amount insured. However, in the United Kingdom there is a system which is described (in section 19 of the 1965 Act) as insurance per cover period. If the insurance should prove insufficient the State has to pay since the provisions of section 18 under which 50 million pounds is to be made available apply. Section 19, however, only applies to licensees. It does not apply to Government Departments or the Atomic Energy Authority which do not normally insure installations.

LIMITATION OF LIABILITY IN TIME

This is dealt with in Article VI of the Convention, under which the normal limitation period is 10 years from the date of the nuclear incident.

If, however, under the law of the Installation State the liability of the operator is covered by insurance or other financial security or by State funds for a period longer than 10 years the law of the forum can specify a period of limitation which may be longer than 10 years but must not be longer than the period during which the operator's liability is covered. The Article also makes special provision for cases where the nuclear material involved in the nuclear incident was stolen, lost, jettisoned or abandoned. In such cases the 10-year period is subject to the provision that it must in no case extend beyond a period of 20 years from the date of the theft, loss, jettison or abandonment.

The UK law has in fact provided a longer period. So far as the operator is concerned it retains the period of 10 years. But it also provides for a limitation period of 30 years from the date of the nuclear incident. Claims made after the expiry of the 10-year period but within the 30-year period are dealt with in the same way as claims made after the 5 million pound limit has been reached. They are to be made to the appropriate Minister and are to be met out of moneys provided by Parliament. Similar provision is made for the case of incidents involving nuclear material which has been stolen, etc. Here the period again is 30 years from the date of the incident subject to the condition that the occurrence must have taken place within the period of 20 years from the date of the theft, etc. I must, however, emphasize that all these special provisions only apply in those cases in which the UK courts have jurisdiction.

Article VI(3) of the Vienna Convention also provides for the law of the forum to establish a limitation period of not less than three years from the date on which the claimant knew or ought to have known both that he had suffered damages and of the operator liable. The United Kingdom has not exercised this option.

TRANSPORT OF NUCLEAR MATERIAL

So far as possible the Convention applies the rule of channelling liability to the operator, and Article II (1)(b) and (c) contains very detailed provisions as to how liability is assigned as between what I may describe as the receiving and the sending operator. These are not to be found in the UK legislation which, however, produces the same results by referring to "carriage on behalf of" an operator. Where, however, nuclear material is sent to an operator from a non-Contracting State the Convention imposes as a condition of liability of the receiving operator that he must have given his written consent to the dispatch of the nuclear material to him (Article II(1)(c)(iv)). While this condition is duly applied to the case of foreign operators (section 13 (3) of the 1965 Act) UK operators are not given this advantage.

More important, particularly in these cases of transport, is the question of the territorial scope of the Convention about which the Convention itself is silent. The Vienna Standing Committee in 1964 came to the conclusion that the Convention did not cover damage suffered within the territory of a non-Convention State. This is the rule adopted by the UK legislation and is laid down in section 13(1)(b) of the 1965 Act. But the Act also contains a special provision, outside the scope of the Convention, in section 13(2), under which UK operators are liable to pay

compensation for injury or damage suffered to or on a British ship or aircraft in a non-Contracting State.

JURISDICTION

Article XI of the Convention covers the question of jurisdiction. The general rule it lays down is that jurisdiction lies with the courts of the Contracting Party in whose territory the nuclear incident occurred. Where, however, this rule cannot apply, for example when the incident occurred on the high seas, jurisdiction lies with the courts of the Installation State. Cases, however, can be envisaged in which the courts of two different Contracting Parties have jurisdiction notwithstanding that the general principle is that there should always be a single competent forum. In such cases Article XI(3)(b) provides for the question to be settled, apart from the special case covered by (3)(a), by agreement between the Contracting Parties concerned. To cover all possible cases the UK law empowers the Minister to certify which court has jurisdiction under the international conventions (section 17 of the 1965 Act).

CONCLUSION

I have dealt only with the more important principles of the Convention and only very shortly. But it is sufficient to show how careful one must be in transposing the Convention into national law, and I draw attention in particular to the following:

(1) It is insufficient simply to adopt the Convention as part of the national law because it contains a number of options which a country may or may not decide to exercise.

(2) It must always be borne in mind that the Convention gives some options to the Installation State and some to the law of the forum. It is not possible therefore to legislate so that domestic and foreign operators are dealt with in the same way. The obvious example of this is the amount of liability of the operator which is governed by his own law whatever the court which has jurisdiction. But there are a number of other instances and first case needs to be examined to ensure that the provisions of the Convention are accurately transposed and that the appropriate law is applied. In this connection I draw attention to the fact that the UK legislation, while leaving as it must the limitation of the amount of liability of an operator of another Contracting Party to be decided by the law of that Party, when it comes to additional funds to be provided by the State, has treated all operators alike. Victims will benefit from the provisions for State intervention when the UK courts have jurisdiction in all cases where the operator comes within a Convention to which the United Kingdom is a party.

(3) Legislation has effect only in the courts of the State concerned. While therefore it is of course essential in transposing the Convention into your own law to cover your own operators, you must also take care to include the necessary provisions to impose liability on an operator from another Contracting State in order to cover the case of a nuclear incident in the course of transport of nuclear material where jurisdiction may lie with your courts.

.nstanding what I have just said, your legislation must of course
vide for a limit of liability for your operators wherever the nuclear
.ncident may occur, and for the necessary financial cover.

Finally there is the question how to deal with non-Contracting States. This of course does not involve the Convention in any way, but it would clearly be inadvisable to ignore the question altogether. You may therefore be interested to know how the United Kingdom has dealt with this problem. The Acts impose the Conventional liability on what are described as "relevant foreign operators". These are operators from a country which is a party to a Convention on Third Party Liability in the field of nuclear energy to which the United Kingdom is also a party. Cases in which neither such a foreign operator nor a UK operator is liable are dealt with by section 11 of the 1965 Act. This of course only covers incidents in the United Kingdom and its territorial waters and imposes liability for injury or damage suffered therein upon the person on whose behalf the carriage of the nuclear material is being effected. Liability is absolute and without limit.

There is also one other provision of interest. Section 17(5) has the effect of barring the enforcement in the United Kingdom of judgements obtained in non-Contracting States if it is shown that the sum awarded was in respect of nuclear damage and was not awarded in pursuance of an international agreement in the field of transport, the application of which is presented by Article II(5) of the Vienna Convention.

There are of course many other provisions of the Convention which I have not mentioned but I hope that I have dealt adequately with the most important ones.

AN OUTLINE OF NUCLEAR RISKS AND FINANCIAL SECURITY

A Note by the Secretariat of the IAEA

1. Nuclear risks may be divided into two general categories:

(a) Material damage to the nuclear installation itself and the consequences thereof;
(b) Damage to third parties, both personal injury and property damage.

An additional risk is that of damage suffered by employees on the site.

2. Financial security to meet these risks may take different forms, or a combination thereof. It will depend on the type and extent of risk, the value of the installation, applicable law and the financial means available. Moreover, as concerns third party liability and injury to employees it may also depend on requirements established by specific laws and regulations in this field. With respect to material damage to the nuclear installation, financial security, if any, will normally take the form of private insurance. In some cases, however, insurance cover will not be taken, either by choice, or because cover is not available for certain risks. There will thus be "self-insurance" for all or part of these risks.

3. The position in respect of damage to third parties is somewhat different because, under common law, liability is usually unlimited; but where liability is governed by international convention (Vienna Convention on Civil Liability for Nuclear Damage, Paris Convention on Third Party Liability in the Field of Nuclear Energy) and by specific national laws and regulations, this will be subject to a special system. If no such special system exists, "self-insurance" remains a theoretical possibility; where such system does exist, "self-insurance" is possible only where the State, or one of its constituent sub-divisions, is the operator of the nuclear installation. However, private insurance will normally be the kind of financial security sought to cover third party liability. Other types of guarantees may also be envisaged, theoretically for example, the deposit of cash or securities.

Nevertheless, as a consequence of the high potential liability involved, State guarantees may be provided, in varying forms:

(i) as the sole type of financial security (for State-operated or State-owned installations);
(ii) as a supplement to insurance cover, where this does not meet the full liability of the operator; or
(iii) as an additional cover, beyond the amount of the operator's liability.

SOME CONSIDERATIONS AFFECTING NUCLEAR INSURANCE IN RESPECT OF LAND-BASED INSTALLATIONS

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BACKGROUND

Some 300 years ago, insurance was defined as an arrangement whereby the losses of the few will be met by the contributions of the many. Over the years the practice of insurance in its varied forms has all been based on this principle.

It is impossible to say whether or not a particular individual or business will suffer a loss through the happening of a particular contingency, but given a sufficiently large number of exposures to the risk it is possible to forecast the likelihood and extent of such losses.

It is on such calculations based essentially on experience that insurance is able to provide its service to the community. Such calculations, however, presuppose the insurance of a large number of similar risks. Without this, the calls on the funds which have to be built up to meet losses can place an undue strain on them particularly when individual losses can be large in amount.

Special considerations arise in respect of nuclear insurance, which differs from other classes of insurance in so many ways. These are examined in detail by the Panel of Experts, so in this introductory paper I will limit myself to trying to provide a broad picture of the general background.

CHARACTERISTICS OF NUCLEAR INSURANCE

The following are among the most important characteristics, in the context in which we are discussing this subject:

Contamination by radioactivity on possibly a large scale is a new hazard.

Personal injury caused by radioactive contamination may not become manifest for a long time after exposure to radiation has actually occurred.

Even if there is no physical damage either to the installation itself or surrounding property, contamination may prevent usage for quite a long time and removal of the radioactivity may be a long and expensive process.

The resulting injury or damage in the worst possible circumstances could give rise to financial liabilities greater than those hitherto encountered in other fields.

The magnitude of the values at risk in a large atomic installation are considerable. The value of the reactor itself may be of the order of tens of millions of pounds and the electricity generating equipment can cost almost as much.

While the number of atomic installations is growing they are still too few to provide the spread of risk upon which insurance is usually based. Moreover, modified types are being constantly introduced and the underwriting experience derived from one type is not necessarily applicable to those of the more advanced types.

It will, I think, be apparent already that nuclear insurance does pose problems for the Insurer as well as the Insured!

INSURANCE OF CONVENTION AND OTHER TORT LIABILITY

This is a wide subject. For the present, therefore, I will limit my comments to some of the essential characteristics of civil liability insurance of nuclear installations, concentrating on those aspects where it differs from Liability insurance in the conventional fields.

Perhaps the most important point is that the operator's liability is absolute, i.e. is independent of any question of his negligence. Insurance must cover this absolute liability. Secondly, operators alone are liable. Any tort liability which would otherwise fall on contractors or suppliers is made the responsibility of the operator and has to be covered by his insurance or other financial security. This channelling of all third party liability to the operator avoids duplication of insurance and complex legal questions arising.

Another special aspect of nuclear insurance to have in mind is that Conventions allow claimants 10 years from the date of an incident to begin an action to establish a claim in respect of nuclear damage. A nuclear insurance policy, therefore, would normally allow for this period of prescription.

These provisions in the Conventions, while readily understood by Insurers, do cut right across normal insurance principles. In the first case, it is at least unusual to deny an individual the defence of lack of negligence. It is unusual also to impose upon that individual the financial responsibility for the consequences of negligence of other parties.

Under ordinary law, a claimant has to serve notice within a short time of the occurrence of the injury for which it is alleged the insured is responsible. Because of the extended prescription period provided under the Conventions, Insurers can now be faced with claims years after the occurrence of the alleged incident. Moreover, the Insurers may well be unable to close their books in respect of a particular years' business for ten years or more.

The insurance or other financial security may only be used to meet an operator's Convention liability which is essentially one of tort. The security cannot be used to meet a liability which an operator may assume under contract. Should there be any such contractual arrangements, separate insurance cover may need to be sought.

Because insurers must know the limit of their liabilities in respect of any one site insurance coverage is only available on the basis of one

fixed amount for a particular installation. This amount is reduced by each claim payment unless reinstated by agreement, assuming the necessary insurance capacity is available. There is nothing in the Conventions which prevents this, providing that the cover available is not reduced or exhausted as the result of a first incident without appropriate measures being taken to ensure that financial security up to the maximum amount of the operator's liability is available for subsequent incidents.

What I have said so far applies to nuclear injury or damage for which the Conventions impose on the operator an absolute liability. He is liable irrespective of whether or not the damage is attributable to any negligence on his part. This, however, is not the end of his civil liability problems. Associated with the operation of a reactor are dangers to the public such as arise from any other form of industrial activity. The operator's liability for these ordinary non-nuclear risks is left to be decided by the ordinary law. Naturally the prudent operator desires cover for such liability and this is usually provided under a separate section of the policy.

It is considered important that the nuclear and non-nuclear cover be provided in the one policy by the same set of Insurers. After an event, it might well be difficult to separate one aspect of the operator's liability from the other: the provision of both by the same Insurers minimizes the possibility of argument as to which policy is applicable.

The amount fixed under the Conventions for the maximum liability for nuclear damage does not include interest and costs awarded by a Court in actions for compensation. Such interests and costs are payable by the operator in addition to any sum for which he is liable under the Conventions. To meet these costs and also those which might arise in connection with non-nuclear damage, provision can be made in the policy for a further substantial sum.

NUCLEAR AND OTHER DAMAGE TO THE INSTALLATION

An operator knows only too well that, having spent considerable sums of money on the building and fuelling of a nuclear installation, all or much of this money may be lost if there is a serious accident. Just as with other industrial undertakings, the installation may be damaged by ordinary perils – fire, lightning, impact damage from aircraft – and the repair costs may be heavy. With a nuclear installation, however, consideration has also to be given to damage which may arise from the nuclear hazards.

What are these special nuclear hazards which arise in connection with the operation of a reactor and which present calculable insurance risks? The primary one, "melt down", may be described as "Excessive temperature within the nuclear reactor consequent upon a sudden uncontrolled unintentional and excessive increase or release of energy or upon the failure of the cooling system". The second main hazard is the loss of carbon dioxide gas or heavy water from the coolant circuit by any sudden or accidental cause.

Thirdly, consideration must be given to the contamination of the Insured's property on the site outside the reactor itself. That is, all his

property outside the reactor biological shield and the primary coolant circuit. In order to make the operator's protection as complete as possible, the policy is so worded that cover includes the actual external surface of the shield and the coolant circuit.

The policy specification may describe the sums insured on the basis of a blanket amount for all buildings and contents, or they may be individually specified as with an ordinary Fire Policy. If the blanket method is used, there must be division between the reactor and ancillary buildings and other buildings on the site. Nuclear fuel is always an individual item.

If all the property on the nuclear site is included in the Material Damage insurance for its full value, the policy makes provision for practically all foreseeable sources of accidental damage to the reactor itself, other buildings on the site with their contents and the nuclear fuel.

As in the case of civil liability, it is recommended that both nuclear and other perils be insured in the one policy. The need for this is particularly acute in respect of the risks of damage to the installation itself. Insurers have no historically established named peril with which to express the nuclear cover they provide. The centre of a working reactor can operate in conditions of such great heat as to be tantamount to "fire". A reactor incident could arise from conditions which might technically be tantamount to an "explosion". Since both "fire" and "explosion" are two of the perils intended to provide non-nuclear protection, descriptive headings have had to be established to identify the nuclear cover. But clearly, it could be most difficult after an event to decide with certainty just which came first. Cover for both in the same policy with the same Insurers is thus obviously advisable.

INSURANCE OF OPERATORS' CONSEQUENTIAL LOSSES

The losses of an industrialist whose premises are destroyed by fire extend beyond the cost of repairs. While these are being carried out, staff often have to be paid as usual although production and sales may have stopped altogether. This applies, of course, to an accident at a nuclear power station resulting in an interruption of the electricity output. An accident resulting in the shutting-down of a reactor usually results in loss of profits and/or standing charges. There is the interruption pending decontamination of the premises. There may be a time lag in obtaining the approval for the resumption of operation. There may well be delay in obtaining replacement of parts, particularly where there is damage to precision and scientific instruments and specialist plant and materials. Radioactivity may prevent or hamper the fire fighters in dealing adequately with a fire or engineers repairing the plant. Cover for financial losses arising from the consequent interruption of operations is in principle available subject to insurance capacity remaining after the material damage insurance requirements have been met.

Where a power reactor is concerned, the objective would be to devise a basis of cover sufficient to meet all (or the bulk of) the "fixed expenses" with which the operator has to contend, even though for the

time being the reactor is shut down and the proceeds from the sale of the electricity are no longer available. The actual form of policy would be similar to that written in the national market concerned for comparable conventional risks, subject to such modifications as may be necessary when dealing with a nuclear installation.

As usual the consequential loss policy would cover precisely the same range of perils as the underlying Material Damage policy. It would be customary to establish a period of so many months during which, subject to an initial franchise (exclusion from responsibility) of a suitable initial period, the cover would operate. If required, and subject again to the availability of the necessary insurance capacity, a consequential loss cover could be drawn on a sufficiently wide basis as to include within its scope loss of net profit as well as standing charges.

The extent to which in the event of a stoppage the installation operator would be able to bring into operation less efficient generating stations though at correspondingly higher cost than normal, would be for examination as well as, for example, his possibility of purchasing a supply of electricity from other sources.

The basis of rating would normally be a percentage of the reactor rate as charged for the Material Damage policy. The extent of the "indemnity period" would be a significant factor. If this were to exceed 12 months, the sum insured, representing the annual standing charges and/or net profit, would need to be increased proportionately.

INSURANCE OF WORK-PEOPLE

The insurance of the operator's staff against injury by nuclear risks is a point of particular interest on humane grounds. The position of the staff differs somewhat from that of the public in that there is a contractual relationship between the operator and his staff who are not, therefore, third parties in the strict sense of the term.

Under Article II of the Vienna Convention (Art.3 of the Paris Convention), the operator is liable for damage caused by a nuclear incident by any person, whether he is a third party inside or outside the installation or an employee of the operator. In many countries, however, employees who suffer damage may also be entitled to compensation under national or public health insurance, social security, workmen's compensation or occupational disease compensation systems. Under the Vienna Convention, Article IX (Paris Convention Art.6(h)) it is left to the law establishing such systems to decide whether employees should also be entitled to compensation under the Convention.

It may be of interest to note that, under the United Kingdom Nuclear Act, no distinction is made between employees and other persons. Consequently, Part I of the policy, which the British Pool issues to a licensee in respect of his liability under the Act, includes employees of the licensee within its scope. So far as hurt by ionizing radiations is concerned, employees are in the same position as third parties.

But, of course, an employer's common law liability for personal injury from other causes still remains. It is to be noted that this, to a large extent, is based on negligence rather than absolute liability imposed for nuclear injuries.

In the United Kingdom, and I believe in certain other countries, cover for the common law aspect of employers' liability as distinct from that imposed by Nuclear Installations Acts continues to be provided by individual insurers in the open market.

The Personal Accident position in national markets varies. Individual single policies may well not take any special account of the nuclear risk. On the other hand a group policy intended to cover individuals on a known nuclear site might be underwritten so as to recognize the radiation hazard, possibly by an additional premium.

PREMIUMS

A question which closely concerns both operators and their insurers is the cost of insurance, i.e. the premiums to be paid. As, by the definition I have quoted, insurance is an arrangement whereby the losses of the few will be met by the contributions of the many, a balance has to be struck between what insurers receive from premiums and the amounts they are likely to have to pay out in claims. In older branches of insurance, this presents no difficulty as there is such a long history of experience for such risks. Furthermore, there is a wide spread of similar risks. With nuclear business, involving new types of risk, problems arise.

The system used by a number of nuclear insurers is for qualified engineers to make an estimation of the relative risks, after studying all the technical data for each individual case. The hazards concerned with high power reactors are clearly different from those with low power installations. Engineers assessing the risk have to take into account the kind of fuel, the fuel containers, the control and safety gear, the outer containment shell, foundations, coolant containment, the moderator and the mechanical equipment; there are also the internal fire and explosion hazards of the plant.

Underwriters experienced in evaluating hazards generally in the individual country concerned then study all relevant considerations, including the engineers' views and also a detailed site inspection report prepared by a leading surveyor. It will readily be seen that premiums can be fixed only after the application of considered judgement derived from a broad knowledge of general insurance practice to the best scientific advice available in a field which is still in an evolutionary stage.

I should also draw attention to one other point. Nuclear risks of an installation are all channelled to the operator. Liability for nuclear risks which could otherwise fall on contractors and suppliers is extinguished. This, generally speaking, absolves contractors and suppliers from insuring such risks. Without this channelling provision, special insurance would otherwise be needed which could be expensive. In determining the premium which an operator is charged, the insurer has to take account of the fact that the risks are channelled to the operator.

CLAIMS HANDLING ARRANGEMENTS

An incident at a nuclear installation may occur at any time of the night or day. Usually the operating plans for reactors include plans for dealing with such emergencies. A major incident may well involve many

hundreds of claims from the public, and the question is how they are to be dealt with expeditiously.

For this a considerable number of claims officials might need to be deployed at short notice. To meet these eventualities, nuclear insurers make most careful plans. Usually a claims organization is set up under which specialist claims officials are available for movement without delay to the scene of an incident. Those concerned can rest assured that all appropriate steps will have been taken to ensure expeditious settlement of claims.

SUMMARY

I have endeavoured to give you a broad picture of the considerations which have led the insurance industry to develop an organization which they hope is capable of giving the fullest service to the operators of nuclear installations and the public who may be affected.

The extent of the cover required for civil liability and material damage represents on major nuclear sites an accumulation of insurers' liabilities which probably exceeds any other known concentration subject to a single incident. The greatest possible care is taken with regard to safety in these nuclear installations, both in their design and operation, but the possibility of an incident causing catastrophic damage still remains and to cover this risk so far as is practicable is the function of insurance.

The particular role which nuclear insurers can play in each individual country and against a background of differing circumstances will naturally emerge from the papers which follow.

BASIC PRINCIPLES OF INSURANCE FOR NUCLEAR RISKS

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NUCLEAR INSTALLATIONS: PROPERTY (MATERIAL) INSURANCE

The actuarial assessment of a nuclear installation is based on its hazards report and other technical data, which must be made available to the insurers. The insurers can in addition obtain a direct impression by inspection of the installation.

The large number of reactor systems and the rapid development of nuclear technology have made it difficult to elaborate a general system of insurance conditions. The obvious course has therefore been to adapt the policy conditions to the characteristics of the particular nuclear installation requiring insurance. Special problems have arisen here in connection with the insurance of reactors of as yet untested design (prototypes). It is difficult in such cases to obtain reinsurance, since the insurers would be called upon to bear in addition the considerably higher risk applicable during the development stage of a reactor.

Specifically, insurance cover is normally provided for damage to objects located in the installation, due to fire, explosion, lightning, aircraft crashes, reactor runaway and radioactive contamination as a result of an accidental escape of radioactivity from the insured reactor or from insured radioactive substances located on the site.

The extent of the cover is therefore limited by enumeration of the insured risks. A formal contrast to this is provided by the US property insurance pools which offer an all-risks cover, i.e. without separate enumeration of the risks against which insurance is provided. All direct damage to the nuclear installation is insured, with the exception of any special limitations or exclusions.

On the US and European markets, as also in Japan, conventional and nuclear risk insurance is included in a single contract. The view is held that this is an actuarial necessity, since in case of a claim it might be difficult to differentiate between the two. The same primary cause may lead equally well to nuclear or conventional damage. In this way the policyholder is afforded the widest possible cover.

In view of the specific characteristics of damage due to radioactive contamination, liability is in such cases only accepted where the insured objects have become completely or partially unusable or unserviceable, or have to replaced, or do not lose the acquired radioactivity within a reasonable period of time.

The extent of the cover corresponds to the replacement value after deduction of depreciation. In consequence only a form of time-dependent insurance is offered; this is justified by the rapid technical development of the nuclear industry. The cover is in general reduced by the amounts paid out in respect of damage. There is no automatic reinstatement of the original cover.

CURRENT PROBLEMS OF NUCLEAR INSURANCE FROM THE POINT OF VIEW OF INDUSTRY

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A modern industry without suitable insurance protection is nowadays almost unthinkable. This applies especially in the construction and operation of nuclear installations for the peaceful exploitation of the new and indispensable resources of nuclear power.

Industry is responsible for the development and construction of nuclear installations, but in order to place things in proper perspective within the framework of our work today it should be realized that the operators, insurers and, last but not least, the State, are also concerned with the development of nuclear energy, although for obviously different reasons.

The main concern of the constructors – to put it simply – is to plan and design nuclear facilities embodying the latest developments, to build the installations and sell them at home and abroad. In this connection it is worthwhile recalling the opinion often expressed by Professor Balke, President of the Federal Union of German Employers' Associations and former Federal Minister for Atomic Power: an industrial country which engages in export but does not have nuclear installations to offer will also experience difficulty in selling consumer goods, since the potential customers will have less confidence in that country's capabilities.

The second group concerned with the development of nuclear energy is constituted by the electric-power producers, the presumptive operators of nuclear installations, whose aim is to sell electric power once the production of nuclear energy has become economically practicable. Although as regards insurance law, the contractual relations between insurers and constructors or between insurers and operators are in many cases equivalent, it should not be overlooked that the different economic standpoints of constructors and operators, in their capacity of sellers and buyers of nuclear installations, often assume considerable importance and are reflected in the conditions of the contract.

For instance, the persons placing the order often require their industrial suppliers to give firm guarantees regarding the acceptance of operating risks for the first years of operation. In this case one immediately thinks of the "usability guarantee", which cannot be covered under "machine guarantee" insurance either, as the latter, like other types of insurance, in principle covers only damage, not defects.

The insurance business is the third factor in the nuclear power market, and in this connection it can be stated – even from the standpoint of industry – that the German insurance firms, especially since the Geneva Salon of 1955, have not only expressed their willingness to insure the new industrial risks, but have also given practical evidence of this. Had it not been for the availability of the necessary protection in the form of third-party and material damage insurance cover of nuclear installations and of

insurance covering the transport of nuclear materials, the peaceful use of nuclear energy would perhaps not have reached its present stage of development.

The fourth and final factor in exploiting the new source of power is the State in its various manifestations. The Federal Republic of Germany and its provinces (Länder) are interested in the development of nuclear power mainly for political reasons. The Federal Government was therefore obliged to help both the operators and the constructors in getting started; in addition to other forms of relief, it incorporated in the Atomic Energy Act of 23 December 1959 a provision exempting them from liability in the erection and operation of nuclear installations. With an expected minor amendment, this provision is to be extended to 1980.

At the risk of bringing up facts with which you are already familiar, I considered it worthwhile mentioning these four groups – manufacturers, operators, insurers and the State – which are interested in the development of the nuclear industry in order to provide a better vantage point for correctly assessing the general problem with which we are dealing.

It should now be pointed out, first of all, that German industrial undertakings constructing nuclear installations are in practice affected by the question of nuclear insurance just as much as the operators. Whereas in France and the United Kingdom, with their State programs for the construction and operation of nuclear installations, the public authorities placing the order are prepared to take over the risks connected with erection and start-up from the industrial undertakings, the Federal Republic of Germany does not give exemption in this respect; I shall come back to this below. The German undertakings concerned are therefore obliged to take over risks related to planning, construction, installation and, after criticality has been reached, trial operation, and as far as possible to take out insurance. Numerous insurance problems result from this situation, related to insurance for building, installation, machinery, transport, third-party liability (both conventional and nuclear) and to material damage insurance covering fire and nuclear damage.

I should like to mention a few points of importance to the constructor in connection with material damage insurance for nuclear installations. In the Federal Republic complete installations alone are offered, so that under the existing contract conditions criticality must be followed by trial operation for a certain period, which in practice has been found to range from 6 to 12 months.

The constructor must take out material damage insurance over this period for a nuclear installation which he has supplied and in respect of which he is the insured party. He is therefore just as much concerned with cover under the General Conditions of Insurance for this branch as if he were the operator of a nuclear installation.

The General Conditions of Insurance applying to the combined material damage insurance of nuclear installations in respect of fire and nuclear damage, which have not yet been officially recognized by the Bundesaufsichtsamt für das Versicherungs- und Bausparwesen (Federal Control Authority for Insurance and Building Savings) – there is no implied criticism here of the Oberste Aufsichtsbehörde für das Versicherungswesen (Control Authority for Insurance) – represent a combination of coverage for nuclear and conventional risks. Whether this type of insurance is appropriate or whether the looser form of a packaging of the two types of risk would be

better, is a question with which I shall not deal in detail. From the point of view of the insured party what is important is that both conventional primary damage with resultant nuclear damage or, conversely, primary nuclear damage with resultant conventional damage should be covered.

To appreciate the extent of the cover given by material damage insurance, I think it might be appropriate to comment briefly on existing policies of national pools in other countries in relation to the typical nuclear risks; this same matter has also been dealt with by the Deutsche Versicherungsschutzverband (German Insurance Association) in Bonn at the request of the EURATOM Commission. We have the following situation: the West German, French, Italian and UK policies recognize two groups of risks: "excessive temperature in nuclear conversion processes" and "radioactive contamination". The question naturally arises whether this covers all nuclear dangers. The Dutch policy, for example, specifically refers to an additional insured danger – "ionizing radiation". The United States material damage insurance policy, with its all-risk cover, does not classify the risks, whereas the Swiss policy gives the following specifications under the general heading of nuclear damage: "damage resulting from nuclear conversion processes and attributable to an accidental event such as loss of control or burning-out of the reactor, unintentional radioactive contamination by the reactor, by radioactive materials or radioactive wastes". Industrial experts regard this approach as textually similar to the sub-division into two groups of risk mentioned above. The Italian, Dutch and UK policies, however, expressly include cover for excessive temperatures resulting from a failure of the reactor cooling system. This type of cover is not included in the German, French and Swiss policies. The question therefore arises whether we have here a further nuclear risk which needs to be insured or whether failure of the cooling system necessarily leads to an increase or release of nuclear energy with excessive temperatures so that the risk is already insured. In my opinion a seminar in the framework of a series of lectures like those given here today is a suitable occasion for considering this question. The same problem, i.e. whether certain risks are not also necessarily related and subordinate to those mentioned, arises in connection with two other frequently mentioned perils, namely, neutron flux and radioactive radiation. The intrinsic value of the German material damage insurance policies for nuclear installations, which policies are of direct concern to industry in its capacity of constructor during the trial operation period, depends on the answers to these questions.

A further point to which I would like to refer in connection with material damage insurance for nuclear installations is the interest which the constructor has in material damage insurance being taken out by the operator. I realize that I am probably grasping a red-hot iron here: as I mentioned at the beginning, constructor and operator are contracting parties with different points of view. I also realize that in view of the freedom-of-contract principle governing our law of contract, these contractual relations should be suited to individual cases. However, the following problem still remains.

According to Section 36, para. 2.2 of the Atomic Energy Act now in force, one of the cases to which the exemption obligation of the Federal Government does not apply is the obligation to pay compensation for damage incurred by the owner of a nuclear installation during its operation. This also involves cases in which the owner could have a claim on the constructor for damage incurred during operation of the installation.

According to Section 38, para. 2.2 of the Atomic Energy Act, the constructor, in accordance with the principles of liability for negligence, can be held responsible for such damage only if the damaged operator cannot obtain compensation in any other way. From the point of view of legal policy, the purpose of this is to ensure, in the interest of the utilization of nuclear energy, that the constructor of nuclear installations should likewise enjoy certain benefits – in comparison with the normative structure of our third-party liability system – in the event of claims being raised. For all practical purposes, however, exemption of the constructor from liability, as envisioned by the legislator, would be practicable only if the owner had taken out material damage insurance. In that case, the owner would not be able to claim compensation from the constructor for damage to the installation (assuming demonstrable negligence during delivery of the installation) since under Section 38 para. 2 of the Atomic Energy Act he could obtain compensation in another way, assuming that the insurance covered the damage. But under Section 67 of the VVG (Insurance Contracts Act), neither can the insurer(s) seek recovery from the constructor in this case, since there is no transmittable claim. If, however, the installation is not covered by material damage insurance, it is possible for the owner to raise a claim against the constructor.

Since, however, the material damage insurance policy in respect of nuclear installations, in keeping with the system used in all types of insurance policy and in accordance with the principles of sound insurance practice, indicates non-insurable or non-insured perils and also exclusions from the insurance cover (in the nuclear field this is on a larger scale than in other, conventional branches of material damage insurance), the constructor is still liable, notwithstanding the insurance cover. One should therefore not conclude that the constructor is lacking in a sense of responsibility but rather that, because of the benefits intended by the Atomic Energy Act, he is understandably concerned, after the trial operation period and from the time it is handed over, that the nuclear installation should be covered by material damage insurance.

To be sure, in the absence of material damage insurance, the same result could be achieved, as far as the constructors of nuclear installations are concerned, by including in the contract between the constructor and the future owner a provision to the effect that the constructor is liable only for damage caused by non-insurable risks. In this case, the constructor would not be directly affected by the owner taking out material damage insurance. Whether and to what extent such agreements are possible is beyond the scope of this talk.

I should now like to say something about third-party insurance on nuclear installations from the point of view of industry: with third-party insurance the situation is not the same as with material-damage insurance, since the future operator, as the insured party, in conformity with Section 15.2 of the present Atomic Energy Act, already takes out third-party insurance for the test operation period, on the condition that the constructors are included in the insurance cover as co-insureds under a so-called umbrella policy, in line with the General Conditions of Third-Party Insurance for Atomic Installations (AHBAT). But in this case, too, the extent of cover must be of interest to the constructor, since injured third parties can also raise claims for damages directly against him under existing German atomic energy legislation.

I hardly need emphasize that insurance cover depends solely on the extent of liability; since for cases in which there is no liability no insurance is necessary. In view of this primary significance of liability, therefore, not only the extent of the insurance cover is important to the constructor, but also, and above all, the question of principle between legal or economic channelling. At a meeting in December 1968, after the exponents of economic channelling had spoken extensively on the subject, it was asked what arguments the advocates of legal channelling could put forward. This is one of the reasons why I should like to say a few words on this subject.

First of all, the question arises, in what form the Federal Republic of Germany, along with Austria and Greece, can take over the reservation to the Paris Convention of 29 July 1960. Since discussion has centred for some time on the consequences of the different types of channelling, it may be useful to quote the text from Annex I (1) to Article 6(a) of the Paris Convention:

> "Reservation by the Government of the Federal Republic of Germany, the Government of the Republic of Austria and the Government of the Kingdom of Greece: Reservation of the right to provide, by national law, that persons other than the operator may continue to be liable in addition to the operator on condition that these persons are fully covered in respect of their liability, including defence against unjustified actions, by insurance or other financial security obtained by the operator."

I do not know whether the passage I have just read speaks for itself. However, I should like to add that in the period 1958-60 I took part in the Paris talks as adviser to the European Atomic Energy Commission so that I know how this reservation came to be made. It was the best possible compromise, since the Federal Republic of Germany was of the opinion that it would be very difficult to carry out such extensive modifications of the existing system of German liability law, according to which a party directly or even indirectly responsible for damage is liable for the consequences. I should like to mention in this connection that Dr. Weitnauer of the Federal Ministry of Justice, who originally advocated the German reservation and who is now a professor of civil and commercial law at the University of Heidelberg, has since adopted a different point of view and probably would no longer support it.

The point is that the reservation, which could be adopted by the Federal Republic for introduction into national enabling legislation only in the form quoted, clearly means that the constructor of a nuclear installation can "be liable" at all only if he is fully covered by an insurance policy taken out by the owner or by some other financial guarantee. I hardly need add that in these circumstances he is not himself liable. Such would be the result if the Federal Republic made use of its reservation, which has already been described as only a fictitious reservation. I think that a legal formula according to which a party can be held liable only on condition that and only for so long as a third party provides the compensation is, for doctrinal reasons alone, inacceptable. In my opinion, this also disposes of the views, which I mentioned earlier, concerning industry's sense of responsibility, as well as of the related ethical arguments in support of economic channelling.

I think the adoption of legal channelling can be justified further on the following grounds.

Since the Paris Convention has come into force with legal channelling, having been ratified by six contracting States and since, according to what one hears from trustworthy sources in both Brussels and Paris, the other contracting States will also adopt legal channelling, the Federal Republic cannot afford to follow an exclusive foreign policy line, unless it is willing to go its own way in every international situation.

Furthermore, we must take into account the fact that along with the Paris Convention and the Brussels Supplementary Convention, there is also the worldwide Vienna Convention on Civil Liability for Nuclear Damage of 21 May 1963. In reply to a minor question in the German Bundestag on 30 March 1966 (see Bundestags-Drucksache V/489), the Federal Minister for Scientific Research said that "the Federal Government is endeavouring to prepare for ratification of the European nuclear liability conventions and the related modifications of the Atomic Energy Act in such a way as to ensure that it will also be possible – without further amendments of law – to sign and ratify the Vienna Convention, if German interests so require". The Vienna Convention, however, does not provide for economic channelling. The Federal Republic could therefore accede to the Convention only if it introduced the same liability system, i.e. the system of legal channelling.

Recent developments in Argentina and Brazil confirm that the export policy factors which I mentioned at the outset are an argument in favour of the accession of the Federal Republic of Germany to the Vienna Convention. The situation at present is as follows.

When nuclear installations are supplied by a German constructor to States which do not belong to the OECD and which therefore cannot be signatories to the Paris Convention, the liability channelling of that Convention does not apply, the applicable law being the national law of the State in which the purchaser and owner of the nuclear installation is domiciled. If a nuclear incident occurs in this installation, causing damage to third parties, an injured third party can raise a claim not only against the owner but also against the constructor and every supplier in the Federal Republic (I shall not go into the question of jurisdiction) either under his own national law or under German civil law. Any claims against the German constructors or suppliers would, moreover, make good sense if the latter, as is probably often the case, had assets in the country to which the installation had been supplied and in which the likely damaged parties would presumably be. In such a case there would be a possibility of successful enforcement.

If the State in which the installation causing damage is situated has acceded to the world-wide Vienna Convention, which applies only legal channelling, the legal situation in my opinion is the same as that described above, notwithstanding the views expressed elsewhere. In this case, too, the German constructor and all the suppliers could be made liable for compensation. Only if these latter parties – usually legal persons – are domiciled in the same State as the operator, or in States which have also acceded to the Vienna Convention, would it be possible, in the event of claims by damaged third parties, to invoke the legal channelling applicable to their States and hence the responsibility of the owner of the nuclear installation. Similarly, the only case in which such victims could not make German industrial concerns liable is if the Federal Republic also applied the system of legal channelling as a contracting state under the Vienna Convention.

To avoid the risk of legal proceedings and claims resulting from the supply of nuclear installations, especially to non-European countries with

unfamiliar legal systems and practices, and also to avoid export obstacles, it would seem desirable to introduce legal channelling into the Federal Republic, in which case it would then also be possible to accede to the Vienna Convention.

In speaking of channelling from the point of view of industry, it should not be overlooked that although the present practice of constructors in the Federal Republic (in contrast with those of other industrial States) is to supply complete nuclear installations, numerous smaller suppliers may nevertheless be involved. This question of the liability of industrial concerns is ultimately related to a question which was considered at the 47th Conference of German Lawyers, held at Nürnberg in 1968, to deal with the general question of the producer's liability. On that occasion Professor Simitis, an expert on the subject, raised the question whether, in principle, damaged third parties have a right of claim against suppliers, regardless of the type of product. He replied to this question in the affirmative, arguing that the liability to compensate is based on the simple premise that the supplier has caused the damage through his activity. Nevertheless, Simitis expressed the view that cases would arise in which the validity of this solution seemed doubtful, especially in nuclear liability law. The possible extent of damage would then be out of proportion to the value of what was supplied. The obvious solution, therefore, is to limit the number of parties liable to pay compensation, in other words to channel liability towards certain parties from the start. The suppliers should be protected against claims which would threaten their existence and also jeopardize the development of the German atomic industry.

Simitis considers that the simplest solution would be for the operator to take out an umbrella policy covering the suppliers as well. He means, in other words, economic channelling as we know it in practice in the applicable nuclear law. However, he continues, this would limit the risk only relatively. The suppliers would still be exposed to claims and to the hardship of legal proceedings. It can only be a question of time, he says, until legal channelling is adopted, and with it the legal exclusion of all claims on the suppliers. Defects in production would then no longer constitute grounds for raising claims against the constructor of the final product (in this case the nuclear installation) and on his suppliers. Simitis considers that the only way to assess the justification of such a far-reaching modification of the traditional law of liability is to consider the factors which tip the scales in favour of channelling, the most important of which is the wish to control the risk by legal means. The suppliers should be protected against the consequences of nuclear hazards.

So much for the views of Professor Simitis, who advocated legal channelling only in the case of nuclear liability; in respect of all other products, he rejected it. For this reason I do not believe in the validity of the argument that legal channelling could set a precedent.

I consider these views of Professor Simitis important, because in his noteworthy theoretical presentation, he showed, on a purely scientific basis, that the legal-channelling system was the proper solution.

I make this reference to the objective scientific approach in the desire to close these remarks on a conciliatory note. It seemed necessary, for once, to sum up the arguments in favour of legal channelling. I am convinced, however, that those who hold the opposite view are also endeavouring to make a contribution to the peaceful use of nuclear energy, while trying

to defend their own interests. After all, thanks to the co-operation between science, industry, electric power production and insurance it has been possible for German industry, with the help of the State, to advance (without outside aid) from position zero in 1956 to the present position in which we are capable of supplying and operating competitive nuclear installations to the world market at home and abroad.

INSURANCE OF THE OBRIGHEIM NUCLEAR POWER STATION

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The Obrigheim Nuclear Power Station is situated on the river Neckar near Heidelberg, in the southern part of the Federal Republic of Germany. It has an installed capacity of 300 MW(e) gross and was built and commissioned during the period March 1965-March 1969. The general contractor, Siemens, handed over the power station as a turnkey plant to the owner-operator, Kernkraftwerk Obrigheim GmbH (KWO), on 1 April 1969. The present operating team was entrusted with planning, the supervision of construction and installation work and the handling of design problems in 1962. All contract negotiations, financial discussions, dealings with tax authorities and the conclusion of insurance contracts were the responsibility of the owner-operator (KWO).

Insurance matters relating to the construction phase were handled by the general contractor. Similarly, nuclear third-party liability insurance to cover the transport of the fuel elements to the reactor site was arranged by the general contractor, in agreement with KWO.

This paper, therefore, deals only with those insurances which are necessary for the operation of a nuclear power station. Since these are numerous and the associated problems have not yet been finally clarified, we shall discuss briefly the principal aspects of the individual types of insurance on the basis of the insurance contracts concluded by KWO. It should be borne in mind that many of the problems involved had never been encountered before and that we attempted to solve these problems; the present paper, therefore, does not claim to be exhaustive or to reflect the only possible solutions.

1. EXTENT OF THE INSURANCE COVER

Figure 1 shows a general view of the Obrigheim Nuclear Power Station. Figure 2 shows a plan of the power station, the principal buildings being:

(1) Reactor building;
(2) Reactor auxiliary building;
(3) Radioactive waste store;
(6) Turbine house;
(7) Switch house;
(9) Station auxiliary building;
(17) Coolant water pump house;
(22) Offices.

The operational part of the power plant consists of two main systems (Fig. 3):

(1) The primary circuit (with reactor, primary coolant pumps and steam generators) in the reactor building; and
(2) The secondary circuit (with main steam ducts, turbogenerator, feed water pumps and high-pressure preheater) in the turbine house.

1 Reactor building
2 Reactor pressure vessel
3 Fuel elements
4 Control rods
5 Platform
6 Reactor pit
7 Reactor compartment
8 Cable bridge
9 Spent fuel pit
10 Storage rack for fuel elements
11 Spent fuel pit gate
12 Spent fuel pit bridge
13 Biological shield
14 Steam generator
15 Main coolant pipe
16 Main coolant pump
17 Steam generator compartment 1
18 Steam generator compartment 2
19 Main steam pipe
20 Feedwater pipe
21 Operating compartment
22 Lay-down space for pressure vessel head
23 Craneway
24 Crane (200 32·5 tons)
25 Annular duct for inlet air
26 Scavenger air duct
27 Exhaust air duct
28 Steel containment shell
29 Annular space
30 Outer concrete containment shell
31 Material lock
32 Access to annular chamber
33 Reactor auxiliary building
34 Sound absorbers for safety valves
35 Turbine house
36 Turbine house fan with sound absorber
37 Exhaust gas chimney for auxiliary boiler and emergency diesel sets
38 Turbine house crane (80/15 tons)
39 Turbine h.p. cylinder
40 Turbine l.p. cylinders
41 Generator
42 Exciter
43 Exhaust branches
44 L.P. heater
45 Main feedwater pumps
46 Emergency feedwater pump
47 Switch house
48 Start-up transformer
49 Station auxiliary buildings
50 Vent stack
51 Entrance to store for radioactive waste

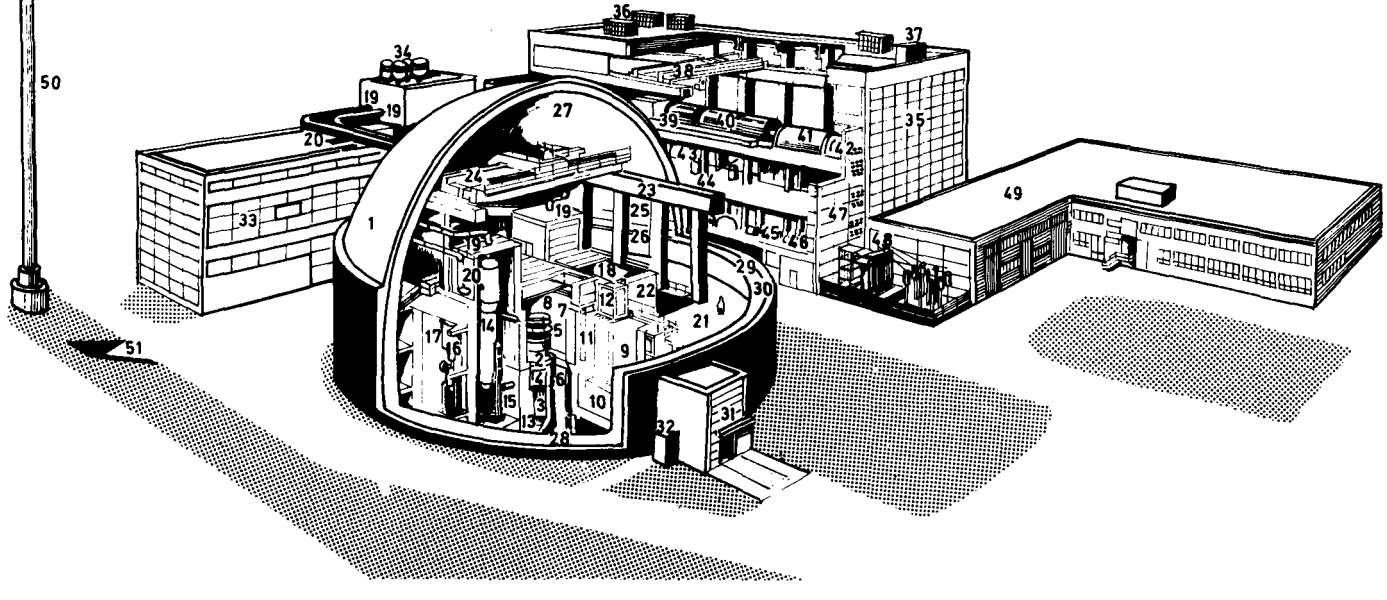
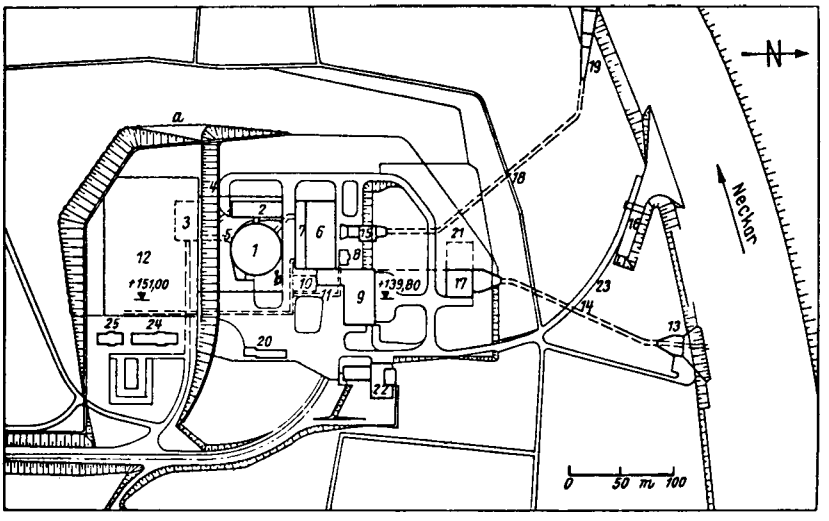


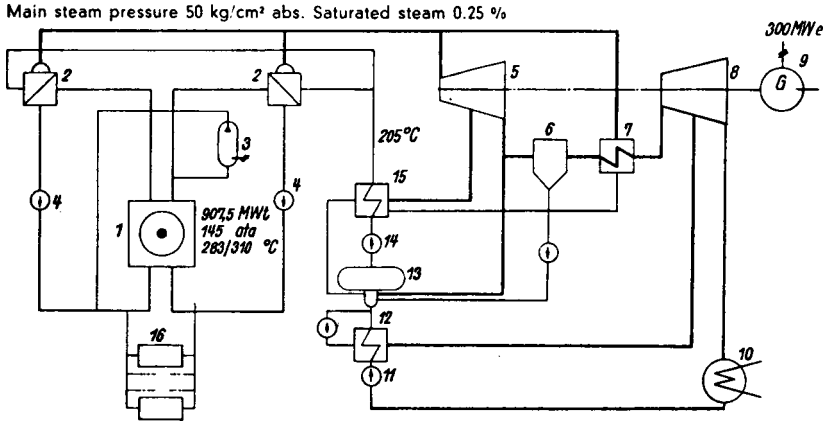
FIG. 1. General view of Obrigheim Nuclear Power Station.



Location plan

1 Reactor building
2 Reactor auxiliary building
3 Store for radioactive waste
4 Vent stack
5 Piping and cable ducts in controlled area
6 Turbine house
7 Switch house
8 Transformer foundations and oil pits
9 Power station auxiliary building
10 Decontamination tank
11 Piping and cable ducts
12 Switchyard
13 Intake works
14 Intake canal
15 Seal well with hydro-electric power plant
16 Landing place
17 Cooling-water pump house
18 Outlet canal
19 Outlet works
20 Garages
21 Sewage disposal plant
22 Offices
23 Rail and road connections
24 Siemens site office
25 Kraftwerk Obrigheim site office
a Station boundary fence
b Boundary of controlled area

FIG.2. Plan of the Obrigheim Nuclear Power Station.



Heat flow diagram

1 Reactor
2 Steam generator
3 Pressurizer
4 Main coolant pumps
5 Turbine h.p. cylinder
6 Cyclone water separator
7 Superheater
8 Turbine l.p. cylinders
9 Generator
10 Condenser
11 Condensate pump
12 L.P. heater
13 Feedwater tank and de-aerator
14 Feedwater pump
15 H.P. heater
16 Reactor auxiliary systems

FIG.3. Operational part of the power plant.

The principal nuclear auxiliary systems (such as high-pressure booster pumps, gas control system, volume control system and chemical control system) are housed in the reactor auxiliary building. The conventional auxiliary facilities (such as feed-water treatment system, workshops and emergency diesel sets) are housed in the station auxiliary building.

The costs of the main plant components are as follows; not all these amounts are included in the insurance computations:

Buildings (total)	DM 48.2 million
Primary circuit (reactor, primary coolant pumps, steam generators, etc.)	DM 44.6 million
Secondary circuit (main steam ducts, turbogenerator, condenser, feed-water pumps, feed-water preheater, switch yard, etc.)	DM 62.5 million
Nuclear auxiliary systems (high-pressure booster pumps, gas control system, volume control system, chemical control system, etc.)	DM 5.2 million
Conventional auxiliary facilities (feed water purification system, workshops, emergency diesel sets, etc.)	DM 5.7 million
Other components	DM 11.2 million

The deliberate isolation of the sector in which thermal energy is produced by nuclear processes (fission) was important from the point of view of choosing certain types of insurance and determining the amount insured. This problem will be dealt with in greater detail below.

2. TYPES OF INSURANCE

When choosing different types of insurance, the owner-operator of a nuclear power station must bear in mind that the insurance has to serve several purposes:

(a) Indemnification for material damage to third parties;
(b) Indemnification for material damage to his own staff;
(c) Indemnification for direct and indirect damage to his own property.

On the basis of the above classification a study was made to ascertain which types of insurance offered optimum protection against the various risks involved. The licensing authority for the construction and operation of nuclear power stations requires evidence that a nuclear third-party liability insurance contract has been concluded so that third parties can be indemnified for material damage. Moreover, it was agreed in the course of the financial negotiations that guarantee and credit agreements should

be concluded in which the operator of the nuclear power station would undertake to insure adequately all buildings and plant and to submit evidence of such insurance.

The types of insurance to be discussed now reflect the foregoing considerations.

2.1. Third-party insurance

2.1.1. Nuclear third-party liability insurance

It is required that third-party liability insurance be concluded to cover damage to third parties arising out of the operation of a nuclear power station (para. 15, German Atomic Energy Act – Deutsches Atomgesetz).

In the light of the special risks associated with nuclear power stations (due to the nuclear fission process and/or to radioactive emission) the insurance industry introduced the concept of "nuclear third-party liability insurance".

The operator of a nuclear power station has to establish the amount to be insured on the basis of complex calculations which take into account the thermal capacity of the plant and the population density over an area of 20 km radius around the plant. In the case of KWO the maximum compensation per event involving damage and per insurance year is DM 60 million.

Figure 4 is a sketch map of Obrigheim and its surroundings.

The insurance covers the statutory third-party liability of the insured party arising out of the officially licensed operation of the nuclear power station and ancillary facilities and out of other activities specified in the licence. Additional insurance, for a maximum amount of DM 1 million, was concluded to cover third-party rescue costs. Such rescue costs would be reimbursed if they were incurred in attempting to prevent greater damage, with or without success.

The insurer has undertaken to continue providing cover to the extent of the amount insured after the payment of any indemnity, under certain conditions and subject to a possible adjustment of the premium. Certain exclusions are specified in the contract, in which the obligations of the insured party are also laid down.

Since the nuclear risk already begins with the delivery of the fuel elements to the site (or at the latest when criticality is first reached), at which time the builder of the nuclear power station is still jointly responsible, it is advisable to include the builder together with the operator as insured party covered by the policy. Experience has also shown that, in order to meet special conditions laid down by the licensing authority, it is advisable to make the builder a co-licensee until the final operating licence is issued, since insurance cover is provided only for the officially authorized operation of the plant.

According to the insurance companies, premiums are not based on exact calculations since the law of large numbers cannot yet be applied to nuclear risks. It is reasonable to expect, however, that if the favourable operating experience with nuclear power stations continues, a corresponding reduction in the relatively high premiums will be possible. Certain tendencies in this direction are already discernible. For example, appropriate rebates have been granted for the period during which fuel elements are in the fuel element store and for the period during which they

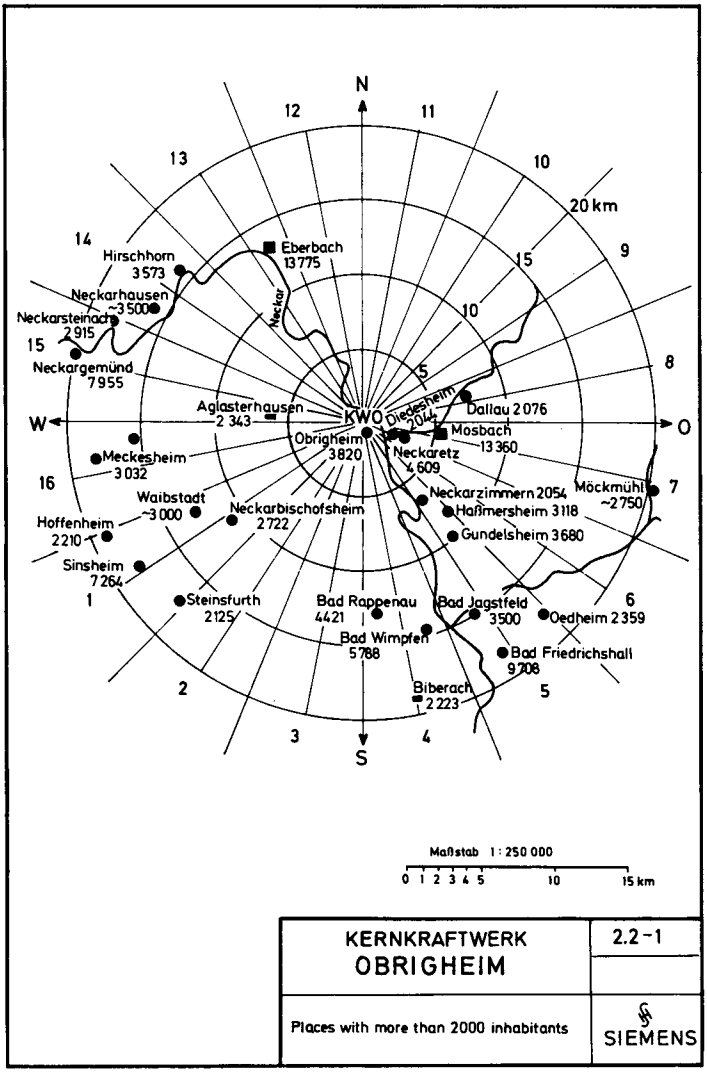


FIG. 4. Sketch map of Obrigheim and its surroundings.

are in the reactor but still sub-critical. In the case of KWO, the premiums for these periods – in all eight months – were substantially reduced. It is unfortunately not yet possible to compute premiums for nuclear third-party liability insurance simply by a linear conversion on the basis of the sum insured under a conventional third-party liability policy and the sum insured under a nuclear third-party liability policy.

At present the contract has a life of one year, being extended for further periods of one year unless notice of termination is given. In order to be valid, notice must be given in writing at the latest three months before expiry of the contract.

2.1.2. Radiation third-party liability insurance

Damage to third parties arising out of the licensed operation of the plant is covered by the nuclear third-party liability insurance; however, the risks associated with calibration sources, ionization-triggered fire warning systems and the transport of small amounts of radioactive material could not be covered in this way. It was therefore necessary to conclude a "radiation third-party liability" insurance contract.

The risk involved in the transport of, for example, samples of water from the primary circuit or samples of irradiated materials to research laboratories is covered, as is damage to third parties arising from, for example, the use of calibration sources. The insured amount is DM 1 million for damage to persons and DM 200 000 for damage to property. This type of insurance does not cover the transport of irradiated or non-irradiated fuel elements; for this purpose a separate insurance contract has to be concluded at the appropriate time.

2.1.3. Conventional third-party liability insurance

Whereas damage caused by nuclear incidents or ionizing radiation is covered by nuclear third-party liability insurance, damage to persons and property caused by conventional incidents is covered by conventional third-party liability insurance.

Since the conventional risks are not regarded as being so serious, the licensing authority does not require that the operator of a nuclear power station be covered for conventional third-party liability. Experience with conventional power stations indicates that an insured amount of DM 1 million for persons and DM 100 000 for property is adequate for plants of the size of KWO. The premium corresponding to these amounts is relatively much lower than in the case of nuclear third-party liability insurance.

The same provision for the assessment of and indemnification for damage apply as in the case of nuclear third-party liability insurance.

2.1.4. Third-party liability insurance for damage to rivers and underground waters

In view of the constantly increasing water pollution in industrialized countries, the legislative authorities in the Federal Republic of Germany have enacted the Water Conservation Law (Wasserhaushaltsgesetz). Industrial enterprises located near rivers are required to reduce water pollution to a minimum and to take all technically necessary and economically reasonable measures to prevent the further pollution of rivers.

Such measures have been taken at KWO. In addition to the mechanical and chemical purification (or corresponding dilution) of effluent, all organic effluent is passed through a biological purification plant.

However, since fuel oil for the auxiliary steam block and turbine and transformer oil (altogether about 350 tons) is stored in different places on the site and since large amounts of sulphuric and hydrochloric acid are used in water treatment, third-party liability insurance for damage to rivers and underground waters was concluded, with an insured amount of DM 1 million. In view of their favourable claims experience the insurance companies have substantially reduced the premium for this type of cover in the last few years.

2.2. Insurances covering own staff

2.2.1. Radiation accident insurance

This insurance covers accidents involving radiation with an energy of at least 100 eV and/or neutrons of any energy; damage due both to external irradiation of the body and to the incorporation of emitting substances is covered.

The First Radiation Protection Decree (Erste Strahlenschutzverordnung) of 24 June 1960 lays down the general radiation protection measures which – with due observance of the standards applied in science and technology – should in principle be taken by those responsible for radiation protection. However, since certain doses are inevitably absorbed by occupationally exposed persons working at nuclear power stations, para. 25 of the First Radiation Protection Decree specifies the maximum permissible doses for such persons. In the event of damage to health in spite of all safety measures an appropriate insurance contract has been concluded by the employer in pursuance of his staff welfare responsibilities. Such an insurance should be considered as being supplementary to the statutory requirements of the social security system (Reichsversicherungsordnung and Berufsgenossenschaft).

Under the terms of the radiation accident insurance, the first signs of damage to health must be detected and reported to the insurer within one year after the accident. The accident is deemed to have taken place at the time of the incident involving severe irradiation and/or the incorporation of emitting substances. An accumulation of doses over a given period could also lead to an impairment of health. In such a case the insurance should, in my opinion, comply with the requirements of the social security system (Berufsgenossenschaft).

In the case of a radiation accident the indemnity depends on the degree of disability.

There are various ways of fixing the insured amount: the emoluments of an employee may be taken as the basis for calculations or fixed amounts may be stipulated for disability and death.

The insurance contract is based on the General Conditions for Accident Insurance (Allgemeine Unfallversicherungsbedingungen) and on the Special Conditions for Radiation Accident Insurance (Besondere Bedingungen für die Strahlenunfallversicherung).

Since the individual workers at a nuclear power station are exposed to radiation to differing extents, the following classification of personnel was adopted, after lengthy discussions, for the fixing of premiums in our case:

(1) Persons employed all the time in the "controlled area" (as defined in the First Radiation Protection Decree);
(2) Persons employed outside the controlled area who work for part of the time (over 50%) in the controlled area;
(3) Persons employed outside the controlled area who work for part of the time (under 50%) in the controlled area;
(4) Persons who do not handle emitting substances or devices.

On the basis of this classification a reasonable agreement was reached regarding the level of premiums.

2.2.2. Group accident insurance

Against non-nuclear accidents coverage has been provided for all employees by so-called group accident insurance. The coverage agreement was concluded between the operator and an insurer on the understanding that all persons employed by the operator of the nuclear power station on a permanent basis were automatically included, even if they had not been enrolled at the proper time through an oversight. Coverage is provided for an accident in which the employee suffers injury to his health through an outside event to which he is unexpectedly and involuntarily exposed. This type of insurance is voluntary and not laid down by law or stipulated by the licensing authority.

The premiums are accordingly borne by the employer. In the same way as in radiation accident insurance, compensation is provided for in cases of disability or fatal accident. The coverage applies to occupational accidents, including those occurring on the journey directly between residence and place of work. But it does not apply, in conformity with the regulations laid down by the Berufsgenossenschaft, to cases when the duration of the journey is longer than normal or the journey itself is interrupted for purely private reasons (to make purchases, visit restaurants, and so on).

For the purposes of premium assessment the station employees are divided into groups according to the extent of the risk:

(1) Clerical work involving occasional travel;
(2) Travelling representatives; supervising engineers;
(3) Chief foreman;
(4) Fitters, assistant foremen, drivers;
(5) Activities involving greater risk, e.g. work on scaffolding.

These criteria are of valuable assistance in calculating the premiums and classifying an employee in the appropriate group both for the insurer whose task it is to do so as well as for the party insured.

2.2.3. 24-hour accident insurance

In connection with the above-described coverage, station employees are personally at liberty to insure themselves in addition against all kinds of accidents occurring during non-working hours. Those taking out this type of insurance are thereby further covered against accidents unconnected with their occupation. The small charge added to the premium for 24-hour accident insurance is paid by the employee concerned.

2.3. Insurance covering the plant owner-operator

2.3.1. Machinery insurance

Machinery insurance, also known as machinery breakdown insurance, is one of the most important types of coverage for the owner-operator of a nuclear power station. Under this form of insurance coverage is offered on the broadest scale for machinery, installations and mechanical equipment.

The German Utilities Association (Vereinigung deutscher Elektrizitätswerke – VDEW) has negotiated special terms of insurance with the insurance companies for machinery coverage, which contain the most important provisions relating to the property insured, place of insurance, risks covered, extent of obligation to indemnify, the date of commencement of the insurance, the obligations incumbent on the insured party, as well as the settlement of claims and other details.

These terms should be regarded as the framework of the agreement. In more specific cases that arise, special terms have to be negotiated between insurer and insured. As a particular example, this framework does not take into account the requirements of nuclear power stations in connection with new types of risk of a technical nature. Under the terms of the insurance agreed for members of the German Utilities Association it is also stated that the coverage does not normally apply to losses caused through atomic energy. It was consequently necessary to draw up additional agreements of a special nature since (as will be dealt with below) global insurance against nuclear damage was not acceptable to KWO.

After long negotiations it was provisionally agreed to include the following expenses in machinery insurance as a first loss coverage:

(1) Expenses incurred in connection with repairing damage to machinery, for example the cost of eliminating operational radioactive contamination;
(2) Expenses incurred in providing access to damaged property, e. g. the removal or reconstruction of enclosing walls;
(3) Expenses incurred in connection with the protection of personnel assigned to repair damage, e. g. additional protective clothing, intervals in the work, or limitation of the permissible radiation dose;
(4) Expenses arising out of the fact that the damaged property is incapable of repair and has to be replaced because of operational contamination.

Not included so far under machinery insurance are the reactor pressure vessel as well as the components inside the vessel and the fuel elements. It is to the advantage of the operator to have some of these items covered by machinery insurance as soon as possible. We consider that an interim solution would be first loss coverage for the reactor pressure vessel, including the internal components but excluding the fuel elements and absorbers.

Experience gained to date by KWO has already shown that the nuclear part of the facility is not as likely to break down as is generally believed. It is usually the conventional components that are liable to failure, i. e. fittings, seals, and so on. This is quite understandable and can be explained by the greater care and precision called for in the manufacture, installation and assembly of the nuclear part. In terms of monetary value, exclusion of the reactor pressure vessel, its internal components and the fuel elements constitutes quite a considerable sum. In our own case it amounts to about DM 75 million.

On the other hand, it is not yet absolutely clear to the operator at the present stage whether fuel elements ought definitely to be included under machinery insurance or not. Difficulties involved in carrying out repairs

or making structural alterations to fuel elements that have been irradiated are so extensive as to be possible only at great expense. Whenever insurance coverage is planned, it would be more advisable to insure the fabrication and reprocessing costs, since the fissile material can basically be re-utilized; it does not therefore seem necessary to include in machinery insurance the net value of the material, which is about two thirds of the value of a core loading.

Nor has the question of the time interval between two inspection periods been finally settled as yet. The first major turbine inspection must take place, at the very latest, three years following the start-up of the station, and thereafter every four years; the future has yet to show whether or not longer intervals are possible. It may be stated as a general rule that, at least the first time, it is very much in the interests of the operator himself, particularly during transition to larger units (300 MW, 600 MW and 1200 MW), to ascertain the exact state of his machinery as early as possible. Thereafter the inspection periods could be more widely spaced, especially in view of the fact that in a few years technically advanced processes (e. g. acoustic measurements or acoustic control techniques) will probably be employed, for example, to keep intermittent or continuous check on such items as turbines or the primary coolant pumps. In this respect the interests of the insurer basically coincide with those of the insured. Hence it should also be possible to adapt fixed agreements so that they reflect the state of technical progress attained.

With regard to assessment of premiums, the insurers point out that no experience has yet been gained as far as larger machine assemblies are concerned, although it is easier in this case to extrapolate the probability of risk than, for instance, in the field of nuclear third-party liability insurance. And so, in order to meet the wishes of the operator the insurer has here also, following the normal practice in machinery insurance, agreed to a "premium regulation" clause, under which a provisional premium (V) is first paid for a set period of time.

Over this period the loss experience and the indemnity paid (S) are set against the premium. The introduction of an upper limit (d = 11. 11%) enables the insured party to participate genuinely in the saving made, and the obligation to pay an additional premium is limited (Fig. 5):

$$d = \frac{S \times 20}{V} - 4.45$$

Since nuclear power stations are still at the trial stage, it was agreed that if certain shut-down periods (expressed in hours/year) were exceeded, a so-called "shut-down" discount would be offered.

To establish the insured sum a fairly detailed inventory of the machinery is required. The minimum self-insurance for each item was fixed separately. In so doing two factors were decisive: first, not to take upon oneself excessive expenditure in the event of damage and, second, to keep the administrative work to a minimum when the loss experience is relatively small. Furthermore, it became clear during the final negotiations that it was not economically an advantage to insure only the larger components, and not the smaller assemblies, connections and piping. In the event of loss there would always be difficulties in demarcation. The reduction in premium through omission of the smaller assemblies, piping and

connections is relatively small. As a result, coverage was fixed for all machinery, installations and mechanical equipment, with the exclusion clauses being drawn up separately.

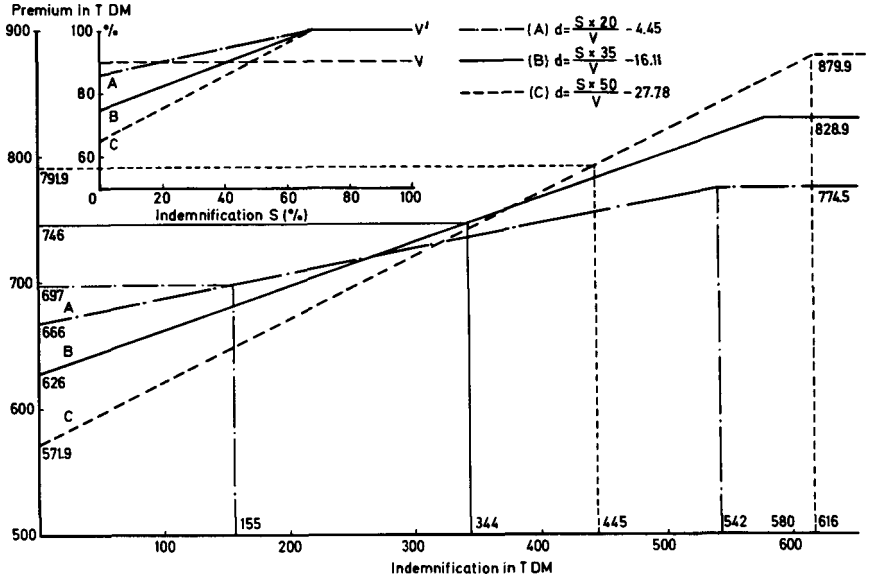


FIG. 5. Calculations for the premium-regulation clause.

2.3.2. Conventional fire insurance

The problems relating to "conventional fire insurance" were very difficult to solve in our case. Since the Obrigheim Nuclear Power Station is situated in the former state of Baden, it was necessary to adopt the following sub-divisions:

(1) All buildings, internal installations and similar structures joined to the buildings are subject to compulsory insurance with an insurer possessing the monopoly, i.e. the Baden Building Insurance Agency (Badische Gebäudeversicherungsanstalt);
(2) It is in the interests of the operator to have all other objects insured by a private insurer, in fact through the German Nuclear Reactor Insurance Association (Deutsche Kernreaktorversicherungsgemeinschaft – DKVG), which forms the pool.

The Baden Building Insurance Agency (a compulsory monopoly) is liable under the Building Insurance Act (Gebäudeversicherungsgesetz) for damage caused by fire, explosion or lightning, as well as for unavoidable consequential loss through fire, explosion or lightning.

In addition, the Baden Building Insurance Agency is liable under the Act of 7 March 1960 on the insurance of buildings against loss due to tempests and other natural forces for damage to insured buildings and sections of buildings caused by storms, hail, high-water, flooding, heavy snowfall, avalanches, landslides and rock-falls.

In this case also the insurance covers unavoidable consequential loss due to natural forces.

When the period of construction begins, the party commissioning construction of the building (usually the subsequent owner-operator of the station) has to take out so-called "building-site" insurance, which is adjusted on a yearly basis in proportion to the progress made with the construction. Estimate statements are provided for this purpose and brought up to date periodically. This compulsory monopoly insurance covers not only buildings but also many internal structures that are in unit with the building or designed to fulfil a load-bearing function. Examples of this are travelling crane tracks, lighting domes, electric clock cables, inlet and outlet piping for water, sanitary installations, washrooms, the central heating system, laboratory benches and built-in cupboards.

To establish the extent of coverage and the limits of the insurance provided by the Baden Building Insurance Agency the following solution was adopted. The estimate statements were prepared by assessors from the Baden Building Insurance Agency in collaboration with engineers from KWO. All objects that did not come under the coverage provided by the Baden Building Insurance Agency were, whenever necessary, insured by a private insurance company.

So much for the scope of the coverage offered by the Baden Building Insurance Agency.

For the purposes of establishing the causes of damage, the question came up whether loss due to fire resulting from a nuclear incident fell within the liability of the Baden Building Insurance Agency. Since it was not possible to reach any agreement on this point, the owner-operator of the Karlsruhe Nuclear Research Centre brought up a test case for consideration in the Administrative Court (Verwaltungsgerichtshof) of Baden-Württemberg, in agreement with the Baden Building Insurance Agency, and obtained an official ruling on the matter. On 22 January 1963 it was decided that: "... the Baden Building Insurance Agency is further obliged, pursuant to the provisions of the Building Insurance Act, to provide coverage for a case in which a fire or explosion is caused by the release of atomic energy ...".

In accordance with this ruling, the compulsory monopoly insurance organization of Land Baden is also liable for loss due to fire and explosion when the fire or explosion in question is caused by nuclear energy. The liability does not apply, however, to loss due to nuclear processes (radioactive contamination) that occurs as a result of fire, lightning or explosion.

From the operator's standpoint there was now a gap in the coverage as regards the overall risk of loss due to contamination. There were two possible ways in which to bridge that gap. I will return again to this point when dealing with the combined nuclear damage and fire insurance.

Since the Baden Building Insurance Agency collects the premiums by the "assessment" or distribution method, they are subject to certain fluctuations from one year to the next (mutual insurance). So that the same basis of assessment should apply to all property owners entering into contract with the compulsory monopoly insurance organization, the insurable value was calculated on the basis of the construction cost index as it stood in 1914. For building materials of new types standard prices were made, calculated on a 1914 basis. On these new insurance values based on the 1914 position, a risk rate is used that is ordinarily agreed between the

industrial enterprises and the Baden Building Insurance Agency. The risk rates vary in level for individual industries.

The indemnification paid in one accounting period by the Baden Building Insurance Agency together with a contribution to administration expenses are, as already mentioned, apportioned between the whole insured community.

The remaining fire risk for machinery, mechanical plant, apparatus and other items of the fixed assets is insured by a private fire insurance company. There is no statutory obligation to insure machines, mechanical equipment and other plant items, but the operator is expected to cover the risks in the way customary in the industry, within the framework of the guarantee agreements already mentioned. The fire insurance for the machinery and mechanical plant was effected in accordance with the General Conditions of Fire Insurance (Allgemeine Feuerversicherungsbedingungen - AFB). The risks insured against, insured objects, replacement value, place of insurance, safety precautions, premiums, starting date of liability and other matters are laid down herein. Over and above these general conditions it was necessary, because of the structure of the nuclear power station, to find a further agreement.

Because of the special agreements relating to combined nuclear damage and fire insurance, the contents of the reactor building (machines and mechanical plant) as well as the fissile materials and fission products (nuclear fuel) have so far been excluded from cover in the conventional fire insurance contract.

2.3.3. Combined nuclear damage and fire insurance

In the German Federal Republic the "General Conditions of Insurance for Combined Nuclear Damage and Fire Insurance of Nuclear Plants" (Allgemeine Versicherungsbedingungen für die verbundene Sachversicherung von Atomanlagen gegen Feuer- und Kernenergieschäden - ASBAt) were drawn up by the insurance industry, and basically these are the conditions used by the DKVG. This insurance, apart from the risks covered by the AFB, such as fire, lightning, explosion, etc., covers overheating during atomic fission and damage from radioactive contamination.

§ 4.1 of the ASBAt reads:

> "Excessive temperatures shall be understood to be abnormal temperatures that are not foreseen in normal operation and that originate from the insured plant or the insured radioactive materials as a result of the accidental increase or release of nuclear energy ..."

§ 4.2 of the ASBAt reads:

> "that radioactive contamination is present if the insured objects become wholly or partly unusable and unserviceable and must be abandoned, or do not lose their radioactivity within an appropriate time without measures of decontamination".

The insurance industry has now developed the system of combined nuclear damage and fire insurances. If insurance cover against nuclear

risks is granted, such insurance must include conventional fire risk. The operator of a nuclear power station will have no objection to this grouping of risks as long as the marginal conditions of the insurance are acceptable to him.

In the first conversations with insurance companies which were interested in fire insurance business and in the conclusion of combined nuclear damage and fire insurance for KWO, it was pointed out that these insurance companies would be only first insurers and that the whole risk of fire and combined nuclear damage and fire insurance would be carried by the pool (DKVG) on the principle of overall coverage. The greater part of the risk would be reinsured abroad on the basis of insurance contracts.

In addition, KWO was informed that overall coverage alone could be considered. Against this background, the KWO decided after much deliberation and consultation also of its board of directors to seek a solution which on the one hand would not involve compulsory overall coverage and on the other hand would have the not inconsiderable advantage of a significant saving in premiums. Attempts were made to bring the reactor building only into the combined nuclear damage and fire insurance and thereby to have insurance cover against both fire and nuclear damage due to temperature and contamination. By the end of 1968, however, these attempts had not succeeded. It was not possible to obtain an offer with this limited range of cover. Consequently KWO endeavoured further to find a solution and after long negotiations achieved the following result:

A. The text of § 4. 1 and 2 of the ASBAt was amended as follows:

"(1) Excessive temperatures shall be understood to be excessive evolution of heat that is not foreseen in normal operation – that originates from sudden increase or release of nuclear energy in the plant of the insured party or from radioactive materials present in it.

"(2) Radioactive contamination is present if the insured objects, as a result of contamination with radioactive particles or of activation caused by ionizing radiation, become wholly or partly unusable or unserviceable and must be abandoned or can only be re-used after decontamination. Insurance shall cover only damage which originates from the plant of the insured party or from radioactive materials present therein and which does not arise in the course of normal operation".

Thereby, in our opinion, it became clear that "excessive temperatures" would be understood to be those that are not foreseen in "normal operation". The concept of accidental increase or release of nuclear energy was replaced by "sudden" increase or release of nuclear energy.

B. Insurance cover under the ASBAt (with the above amendments) is granted for the reactor building and contents, but not for the installations behind the biological shield. The boundary of the reactor building was defined as follows:

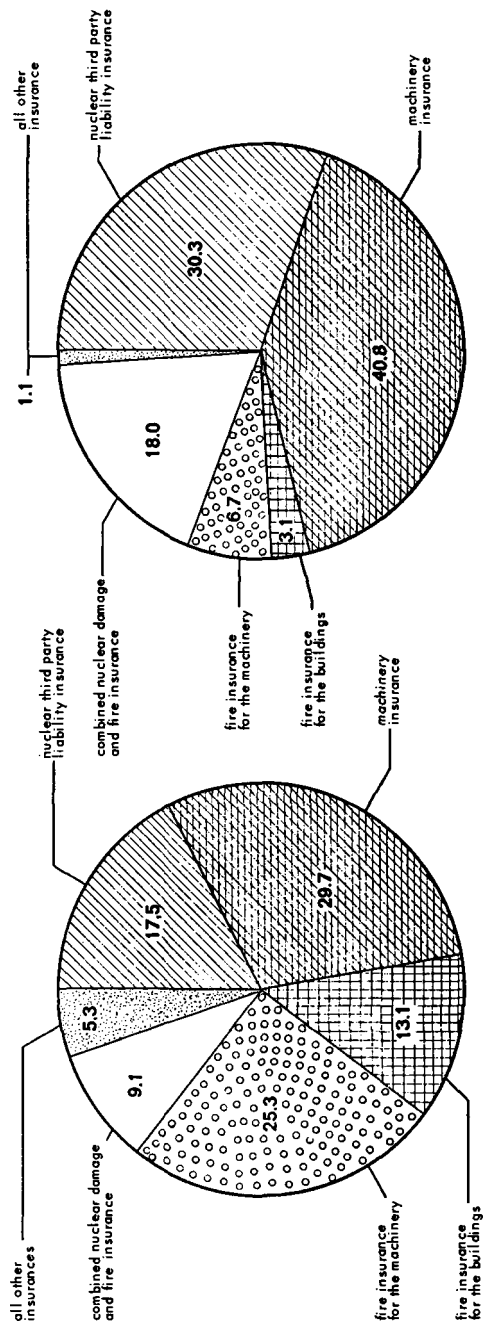


FIG. 6. Summary of the insurances of KWO.

"The man lock and the materials lock end at the outer side of the outer door. Regarding the passages for the live steam and feedwater piping, it was settled that the sleeves set outside the concrete containment but rigidly attached to it are to be considered part of the reactor building for insurance purposes. For the other pipe and cable services, the outer perimeter of the concrete containment is accordingly supplemented. The adjacent pipe and cable ducts no longer belong to the reactor building for insurance purposes."

The total sum insured for the reactor building and its contents excluding the installations behind the biological shield and the fissile materials is about DM 32 million. Full coverage could not be achieved but the compensation is limited to DM 9.9 million for each incident involving damage. In the event of total loss, the operator would thus have an outstanding loss of some DM 20 million to cover, but this would be reduced by the indemnification from the Baden Building Insurance Agency for the concrete and steel containment as well as for the other installations insured by it, provided that fire or explosion had caused the damage. Some insurance risk remains uncovered, and it would be desirable to close this gap as soon as possible by co-operation on the insurers' part at the price of appropriate premiums.

The insurance coverage and scope for the reactor building and its contents can thus at the moment be represented as follows:

(1) The value of the buildings and of the installations rigidly built into them is fully insured with the Baden Building Insurance Agency against fire, including fire caused by nuclear energy, as well as against explosion and other damage from natural forces.

(2) Damage caused by excessive evolution of heat due to atomic fission and by radioactive contamination is covered up to about DM 10 million per incident under the combined nuclear damage and fire insurance.

(3) Damage to machinery, mechanical plant and equipment in the reactor building is covered under the machinery insurance policy except for damage to the reactor pressure vessel and the fuel elements. As already mentioned, there is first-loss insurance cover for the reactor pressure vessel, amounting to DM 200 000. Various other risks are also covered for first loss under the machinery insurance policy.

The development of combined nuclear damage and fire insurance will continue and become more acceptable in proportion as large nuclear power stations are built (see Fig. 6).

2.3.4. Insurance against interruption of operation

KWO has concluded no insurance policy against interruption of operation. The power supply contracts with the customers of KWO, which are at the same time its owners, are drawn up in such a way that a failure of the power station shall place no additional financial burden on KWO on grounds of obligation to supply power. If this problem had not been solved in this

way, the matter of insurance against interruption of operation would have had to be looked into very closely.

The loss of income which KWO itself suffers if the power fails is referred to in the risk distribution contract signed with the Federal German Government.

As set forth above, the insurance of a nuclear power station is a many-sided undertaking and involves numerous novel problems. Both the insurer and the insured must strive to mould their insurance procedures in as conventional a form as possible.

A BRIEF COMMENTARY ON NUCLEAR INSURANCE IN THE UNITED STATES OF AMERICA

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The United States Government has been engaged in nuclear activities for many years. Private industry has been permitted to participate in the atomic energy program since the Atomic Energy Act was passed in 1954. That Act with its many Amendments still governs the nuclear industry of the United States of America today.

In accordance with the Atomic Energy Act of 1954, the Atomic Energy Commission controls essentially all the nuclear activities of the United States of America. The AEC, as that Commission is normally referred to, owns in the name of the United States of America many nuclear facilities located in various parts of the country. However, much of the nuclear industry is privately owned and licensed in accordance with AEC regulations. It is with this latter group that I shall be primarily concerned.

As a preliminary, I should, for the benefit of those who are not familiar with the US insurance industry, describe briefly the role of Marsh & McLennan in nuclear insurance. Marsh & McLennan is an insurance broker acting as an advisor to its clients and a purchaser in the world market of all types of coverage on behalf of those clients. As such, it is not an insurance company, it does no underwriting, and therefore, does not contribute to the payment of any losses. In contrast to the sponsors of many of the Panel members, Marsh & McLennan is a profit-making organization. Marsh & McLennan operates on a world-wide basis with nearly 100 offices and over 4500 employees. It is perhaps of particular interest here to note that 10 of these employees are engaged full time in handling nuclear insurance.

Nuclear energy today is encountered in a great variety of ways. Radioactive isotopes are used in research for machines and for people. They are used in medicine, for both diagnostic and therapeutic purposes. Many companies in the United States of America have engaged in the mining of uranium and the milling of that ore into a product which can be enriched in the isotope ^{235}U, before being made by private industry into fuel elements for power and research reactors.

The electric utility industry in the United States of America has committed itself to build before 1975, 66 300 MW of generating capacity using nuclear reactors as the heat source. To give some idea of what this represents, I shall give some figures from a compilation made by our office in mid-September 1969. This listing, which was not limited to the 1975 completion date, showed 96 reactors operating, under construction, or definitely planned within the United States of America by 52 different utilities totalling 71 713 MW(e) generating capacity and representing a total construction cost of $10 903 000 000. This is a very sizeable investment in nuclear generating plants.

Although construction has encountered numerous difficulties, some large-sized plants are beginning to go on the line. There are many factors that have contributed to a slow down in the rate of ordering new nuclear power production. In spite of this, there have been several plants ordered this calendar year (1969), with a total of 6000 MW. It is interesting to note that one of the US reactors recently won the race to go out the top corner, that is, to reach the level of 10 000 million kWh production before any other reactor in the world. "The top corner" is a reference to a graph of cumulative reactor power production appearing in Electrical World, 27 October 1969.

There is one other area of nuclear energy application that is worthy of note. In the United States of America, considerable effort is being extended in what we call the "Plowshare Program", that is, the peaceful uses of nuclear explosives. This program is still in the research and development phase and appears to be some years away from becoming commercial. Two deep underground detonations have taken place within the last two years in tight gas-bearing rock formations. The second of these, Project Rulison, took place in September 1969. In this case the device was rated at 40 kt and was installed at a depth of 8400 ft below ground level. The success of this underground detonation will not be known for several more months since a half-year must elapse between the date of firing and the date of first re-entry in order to minimize the effects of short-lived isotopes.

The potential of this program has not gone unnoticed outside the United States of America and appears to be attracting attention in a number of countries including France, the USSR and Australia. Recently a project was proposed to develop a harbour on the west coast of Australia to permit the shipping of iron ore. Although this project was dropped, the Australian government has emphasized its interest in studying other proposals for such coastal development projects.

The United States of America is probably a little unique in the way in which it has treated insurance for nuclear operations, although perhaps I should include Canada in this category. Basically, the system used in Canada is similar to that of the United States of America, but my remarks apply only to insurance in the United States of America. The insurance program in the United States of America for nuclear operations was developed following a lengthy and very thorough study performed in 1956 by a committee of top level insurance company officers.

That Committee made a number of basic decisions which can be stated approximately as follows:

1. Workmen's Compensation Insurance, that is the insurance covering injury to nuclear employees, could and should be considered as part of the coverage provided by a standard policy without any change in the wording.

2. Certain liabilities arising out of the use of nuclear materials could be and should be included under the coverage provided by a general liability policy.

3. Other liabilities arising out of the nuclear hazard associated with nuclear materials should be covered by a completely separate policy issued by an association of insurance companies.

4. All damage to nuclear property associated with the nuclear hazard should be excluded from all property policies, but for certain small

amounts of radioactive material, a contamination endorsement could be added for a price to the fire policy. For the vast majority of nuclear facilities, a special all-risk policy should be issued by another association of insurance companies.

5. Business interruption insurance should be made available only to a small group of nuclear facilities.

Since much of the discussion of this panel has concerned the subject of Workmen's Compensation, I would like to expand on item 1 above and describe the way this is handled in the United States of America.

1. Each state within the United States of America has its own Workmen's Compensation law specifying the benefits to be paid employees within that state. This multiplicity of laws and benefit plans are readily covered by a single insurance policy and there is no problem in purchasing such a policy from any licensed compensation underwriter.

2. The Workmen's Compensation policy covers the statutory liability of the employer for injury to his employees in accordance with the law of the state in which the employee works.

3. Most, if not all, of the 50 state Workmen's Compensation laws have now been amended to cover specifically radiation injury.

4. There are now a few specific classifications for radiation workers used by insurance underwriters for premium purposes. Underwriters have been known – especially before the establishment of these classifications – to use an appropriate non-radiation classification and rate, and to load this rate for the radiation exposure. I am not aware of any current situations where such a loading is used.

5. Within our organization, Workmen's Compensation for nuclear operations is handled in a very routine way and questions with respect to it rarely come to our Nuclear Department.

6. In some of our states it is permissible for an injured employee to sue a fellow employee to recover damages arising out of his injury. When this occurs, the action, of course, is one of third-party liability and is not covered by Workmen's Compensation. If such a suit is filed as a result of an injury caused by the nuclear energy hazard, then the defendant employee becomes an insured under the NELIA policy and his liability is covered thereunder. If the injured employee wins recovery under this fellow-employee suit, he must, of course, reimburse the compensation carrier for any interim benefit paid.

Every US liability policy other than those issued to individuals contains the Broad Form Nuclear Liability Exclusion. This excludes only liability arising out of the nuclear hazard and leaves the policy in effect at any

nuclear location for liability arising out of any non-nuclear hazard otherwise covered by the policy.

Thus, to maintain coverage for the non-nuclear hazard, it is necessary for the operator of a nuclear facility in the United States of America to continue to carry his general liability insurance. Further, it does not exclude coverage for liability arising out of all nuclear operations, but only those that fall into the following categories:

1. Any liability covered by a nuclear policy issued by the United States or Canadian nuclear insurance pools.

2. Any nuclear liability for which there is or has been available government indemnity.

3. Liability arising out of the ownership or operation of a nuclear facility as defined in the policy.

4. Liability arising out of the supply of goods or services to a nuclear facility, but note that if the facility is in the United States of America, its territories or possessions, this exclusion applies only to damage to the facility itself.

Thus, one can see that the exclusion has been very carefully tailored so that certain limited nuclear exposures will remain under the general liability policy, whereas the more extensive nuclear liability arising out of the operation of a nuclear facility or the possession of large quantities of fissionable materials is delegated to the special nuclear insurance pools. The length of the exclusion is an indication of its complexity but it is unavoidable if only those exposures having a catastrophe potential are to be carved out of the general liability cover.

In the United States of America, Nuclear Energy Liability Insurance is written by two associations of insurance companies, one – Nuclear Energy Liability Insurance Association (NELIA) – is an organization of almost all the stock liability insurance companies in the United States of America, whereas the other, Mutual Atomic Energy Liability Underwriters (MAELU), is the underwriting group for most of the mutual liability insurance companies in the United States of America. Currently, the capacity of NELIA is $63 550 000 and the capacity of MAELU is $18 450 000, giving a total combined capacity of $82 000 000.

The Nuclear Energy Liability Insurance Facility Form as it is offered by these groups shows several unusual features for a liability policy.

1. The policy covers only liability arising out of the nuclear energy hazard associated with nuclear material on the site described on the declaration page and under some certain specific conditions while the nuclear material is in transit. The conditions for transit are different if the policy is written for an indemnified nuclear facility as opposed to a non-indemnified nuclear facility.

2. This policy covers property of the insured located away from the nuclear facility in exactly the same way as it would treat such property owned by a person other than the insured. This coverage

was included to provide a facility owner with a means of recovery for nuclear damage occurring to his facilities situated at other distinctly separate locations. It has been adapted, however, to provide coverage for nuclear damage to the power plant under construction during the fuel storage period when the fuel is stored on a portion of the power plant property such that it can be isolated and the plot of ground used for this purpose considered to be a site in itself.

3. The policy offers a source of recovery to the insured's Workmen's Compensation carrier for losses sustained by virtue of nuclear injuries to personnel employed by the insured at locations away from the nuclear facility.

4. By means of the omnibus nature of the definition of the unqualified word "insured" the policy covers anyone other than the US Government who has a legal liability arising out of the covered incident.

5. The Policy is a continuous one with premiums being paid on an annual basis and a two-year discovery period beginning on termination or cancellation of the policy.

There are many other terms, conditions and exclusions in the policy but they will not be discussed here. I would like to refer back to the first part of the Nuclear Energy Liability Exclusion. It is difficult for many US insureds to appreciate the full impact of this portion of the exclusion. This paragraph in the exclusion says that someone else can buy nuclear liability insurance without my knowledge and by so doing can, under certain circumstances, make invalid all my general liability insurance with respect to a nuclear loss.

For example, I am the ABC Company and I have furnished a motor to the XYZ Nuclear Company. I have purchased primary and excess liability coverage with a total limit of $25 000 000. The XYZ Nuclear Company has its own general liability insurance and has purchased a Nuclear Energy Facility Form with a limit of $1 000 000. If there is an incident at the XYZ Nuclear Company's Plant caused by the electric motor I supplied and resulting in nuclear injury or damage to third-party persons or property, then the only applicable policy is the Nuclear Energy Liability Facility Form. Everyone with liability for the incident I have described shares the $1 000 000 limit under that policy, and the general liability policies do not apply to such injury or damage for anyone concerned, regardless of the limits.

This does not leave my ABC Company completely at the mercy of its customers, however. There is a second policy available from the nuclear liability pools entitled "Nuclear Energy Liability Supplier's & Transporter's Form". The major purpose of this policy is to provide the named insured with coverage for liability arising out of the nuclear energy hazard associated with nuclear materials not located at a nuclear facility owned or operated by the named insured. Thus, if I purchased a $25 000 000 Supplier's and Transporter's Form, and the accident described above occurred, then the ABC Company would share the $1 000 000 Facility Form with other parties and have available $25 000 000 on its own account as excess over whatever its share of that $1 000 000 might be.

I do not intend to discuss in detail the terms, conditions and exclusions of this policy, but I should point out that there are several general amendatory endorsements which are always attached to this policy. Much of the change created by these endorsements is editorial in nature, but one of the more substantive changes is the elimination of Exclusion h (5) – disposal of waste. It should be noted also that under certain conditions and for a price, some of the other exclusions may be removed, for example Exclusion h (6) – radioactive isotopes away from the nuclear facility.

Exclusion in the general liability policy is a complete exclusion with respect to damage to property at a nuclear facility. Both the Nuclear Energy Liability Facility Form and the Supplier's & Transporter's Form contain exclusions with respect to damage to property at the nuclear facility. This is one area of great concern to suppliers in the United States of America, since nowhere can they purchase coverage for liability for nuclear damage to the nuclear facility caused by their product. Whenever possible the supplier will try to fill this gap by asking a hold harmless agreement in his contract. This is obviously not a practical solution for all suppliers.

The Price-Anderson Indemnification is an amendment, known as the Price-Anderson Act, to the Atomic Energy Act of 1954 which requires the Atomic Energy Commission to sign an indemnification with certain licensees. This indemnity is currently available only to reactors and fuel reprocessors because the Atomic Energy Commission has decided not to extend the indemnification to other types of licensees. In most cases, the licensee must show proof of financial protection to the Atomic Energy Commission before the indemnification will be afforded. Although other methods may be used, all licensees, who have to date found it necessary to show proof of financial protection to obtain their agreement, have chosen to use as such proof a Nuclear Energy Liability Facility Form. For all but the very smallest of the power reactors in the United States of America, the amount of such financial protection to be maintained is equal to the capacity of the nuclear liability insurance pools. The maximum amount of the indemnity is $500 000 000 although for all power reactors with a rated capacity of 100 MW(e) or more it is in effect smaller than this amount because there is a limit of $560 000 000 for the total indemnity and insurance available at a particular location. Thus, with the current limits of $82 000 000 available from the nuclear liability pools, the effective amount of the available Price-Anderson indemnification is $478 000 000 for a power reactor. Incidentally, this indemnification is not provided free of charge by the US Government. The reactor owner is charged at a rate of $30 per thermal megawatt per year. Thus, it can be seen that for a 1000 MW electric plant the cost for government indemnity can run around $90 000 annually.

Liability insurance for nuclear materials in transit becomes complicated because in many instances the coverage is provided by a policy purchased by a third party. In order to determine what policy, if any, applies to a particular shipment, it is necessary to have the answers to these questions:

(a) What is the material being shipped?
(b) Where is it being shipped to?
(c) Where is it being shipped from?
(d) How is it being shipped?

As an example: Nuclear fuel owned by a utility, being shipped from the plant which converts it from UF_6 to UO_2 to a fuel fabrication plant will

be covered during that transit by the Nuclear Facility Form issued to the conversion plant, and, if it has been purchased, by the Supplier's and Transporter's policy issued to the utility owner. There would be no Price-Anderson indemnification applicable to this example shipment.

There is one other unique feature of our Nuclear Energy Liability Insurance that I should discuss; that is, the Industry Credit Rating Program. Under this plan up to about 67% of the annual premium paid by an insured is put into a so-called reserve fund. All losses and loss expenses are paid from this fund, but if after a ten-year period the expenditures from this reserve fund have been such that upon application of a specific formula there are funds remaining accredited to the year in which the premiums were paid, then those funds are returned to the insureds in the proportion in which the insureds paid premium to the fund that year. As an example, Policy NF-1 was issued to General Electric Company in 1957. Their premium that year was $21 759 80 and in accordance with the Industry Credit Rating Plan, $13 905 88 was returned to them in 1967.

Our pool has been in operation since 1957 and, in general, things are running fairly smoothly. During this period, the capacity of the pools has been increased from $60 000 000 to the current $82 000 000, but the US Congress feel that the private insurance industry should be able to provide considerably more coverage than it is now and is strongly encouraging the pools to increase the capacity to $100 000 000 as soon as possible.

The insureds are not happy with numerous items of the coverage, but perhaps it will be sufficient to discuss here a few of the more important ones. Perhaps the greatest concern is shown by the insureds with respect to the 10-year waiting period under the Industry Credit Rating Plan. It is not uncommon today for a power reactor operator to be paying three to four hundred thousand dollars a year in nuclear liability insurance premiums. It will not be long before several multiple unit plants will be in operation and the nuclear liability premiums there are expected to be around a million dollars a year.

Perhaps you can understand the distress of the reactor operator when you think of today's tight money market and the placement of a half million or a million dollars a year into a fund that someone else invests and collects the investment income.

There are many other items of varying degrees of concern to the insured, some of them listed below:

1. The unavailability of product liability for damage to a nuclear facility as noted above.

2. The complete lack of deductibles. Many of the utilities would like to have a large self-insured retention with the NELIA/MAELU capacity as excess. The premium for the pool coverage as excess should, of course, be lowered accordingly.

3. The formulas for the development of premium for large power reactors and for multiple unit nuclear power plants in particular.

Most property policies in the United States of America now contain a nuclear exclusion clause which completely excludes coverage for any

damage caused by the nuclear energy hazard, but which also specifically provides coverage for ensuing fire. Let us look first at the builder's risk situation.

It has been customary for many years in the United States of America to write builder's risk insurance on new construction, tailormaking a manuscript policy for the specific job and selling this to underwriters on a participating quota share basis. This method was used quite successfully for some time on nuclear projects, particularly power reactors, using an all-risk type form that included, among many perils, the important ones of flood, earthquake and transit. The policy contains a nuclear exclusion as well as an automatic cancellation clause with respect to the fuel storage area on arrival of fuel at the site and a warranty that that property would be insured in the nuclear pools. In the case of a multiple-unit nuclear power plant it was frequently possible to have the underwriters agree to continue such builder's risk coverage on the additional unit when the first unit was loaded with fuel. Such policies have in the past been written with limits as high as $75 000 000 at rates that seemed quite reasonable, but today it is almost impossible to find as much as $20 000 000 at a much higher rate than those of a year or two ago, and almost no underwriter will continue coverage at a site, once the fuel elements have arrived, regardless of the inclusion of the nuclear exclusion and the warranty of nuclear pool coverage for fuel storage area.

We have in the United States of America two pools writing nuclear property insurance with a combined capacity of $82 000 000. The first of these is the Nuclear Energy Property Insurance Association (NEPIA) with a current capacity of $66 500 000. The other is the Mutual Atomic Energy Reinsurance Pool (MAERP), having a capacity of $15 500 000. These groups will write builder's risk insurance on a nuclear facility provided that insurance is purchased to 100% of value up to the capacity of the pool and thereafter are willing to change the percentage to value required as necessary. As the percentage is increased the co-insurance factor increases correspondingly, resulting in a larger premium for the $82 000 000 limit as the value of the project increases above that amount. The rates for this coverage are established by the local rating bureau covering the plant location and in most cases result in a premium for the overall construction period less than today's price for the $20 000 000 open market coverage. The policy form is all-risk in nature, but does contain many exclusions, the major ones being flood, earthquake and transit. The pools will provide by endorsement earthquake coverage at the manual rates, but will not provide at any price, flood coverage or coverage for goods in transit.

Whether the builder's risk has been written in the open market or in nuclear pools, the transition to the pool policy covering operation of the nuclear facility has generally been a smooth one. The operating policy is also all-risk in nature and automatically covers all real and personal property located at the described site with the exception of the land. Again, there are many exclusions in this policy, the major ones being earthquake and flood. Flood cannot be covered by the policy, whereas earthquake can be added for a price. It is also possible to add the land to the property covered by means of an endorsement, and similarly, to exclude foundations and footings.

The electric utilities in the United States of America have been generally paying for some years now on the order of $0.05 per hundred dollars per

year for fire, extended coverage and vandalism and malicious mischief insurance on a blanket basis covering all their locations. It is also customary with the utility to purchase a fixed amount, say $5 000 000 or $10 000 000 of boiler and machinery insurance covering the various items of plant equipment, including the turbine-generator. Under the nuclear pool policy, of course, the full limit applies to all perils including machinery breakdown. The rates for this all-risk insurance charged by the nuclear pool do vary of course with the type of nuclear facility. For nuclear power plants, the rates are running between $0.40 and $0.60 per hundred dollars per year based on 90% co-insurance and $50 000 deductible. To give you a feel for the premium involved, let me point out that $82 000 000 at $0.50 per hundred per year is an annual premium of $410 000. Many of our nuclear power plants will be multiple unit facilities and will thus have values in the order of $300 000 000 - $400 000 000. For such a facility to be completely insured for a loss up to $82 000 000, it would be necessary to change the co-insurance percentage requirement in these cases to 20 to 30% resulting in roughly a doubling of the $0.50 rate and thus develop an annual premium for nuclear property insurance alone of about $1 000 000 a year.

Transit underwriters will insure movements of certain radioactive materials within the United States of America, but for nuclear fuels and reactors it is necessary to purchase special transit insurance from the nuclear property pools. Such policies are definitely limited geographically to the United States of America, its territories and possessions, and generally speaking, to shipments by land, although on occasion barge shipments on inland waterways have been covered.

There is one rather unique feature which can be added to these policies for a very reasonable charge. The Unusual Salvage Expense Endorsement provides for a fixed amount of coverage in excess of the value of the shipment that can be used for the recovery of a shipment of nuclear material.

There apparently is available in the open market some excess coverage on the nuclear property insurance form. The actual amount available and cost thereof are not known at this time, and it is suspected that both will vary considerably with the specific risk to be insured. We have reason to believe, however, that a search of the world insurance market would turn up somewhere between $20 000 000 and $50 000 000 of coverage to apply in excess of the $82 000 000 pool coverage.

There are many other points of coverage and cost that I perhaps should have discussed, but it would take a complete book to fully describe the subject of nuclear insurance in the United States of America.

PROBLEMES PRATIQUES DE RESPONSABILITE ET D'ASSURANCE NUCLEAIRES VUS PAR UN EXPLOITANT FRANÇAIS*

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INTRODUCTION

En guise d'introduction à cet exposé sur les problèmes pratiques de responsabilité et d'assurance nucléaires tels qu'ils se posent à un exploitant français, je commencerai par brosser à grands traits le contexte national, en vue de rendre plus explicite le pourquoi des solutions françaises.

A cet effet le plus simple est sans doute de donner réponse aux questions inscrites à votre programme de travail, tel qu'il a été tracé dans l'invitation faite par l'Agence à vos Gouvernements de participer à ce groupe d'étude sur l'assurance nucléaire.

La France a ratifié la Convention de Paris et celle de Bruxelles.

Le régime français est définitivement en place depuis le 12 février 1969, la Convention de Paris ayant été publiée au Journal Officiel la veille.

La France n'a pas signé pour le moment la Convention de Vienne, mais la grande similitude des deux Conventions de Paris et de Vienne permet de considérer la législation et la réglementation nationales françaises adaptées à l'une comme à l'autre.

On trouve en France:

- des installations appartenant au Commissariat à l'énergie atomique, établissement public, de caractère scientifique, technique et industriel, doté de la personnalité civile, de l'autonomie administrative et financière. L'exploitation en est assurée par le CEA.
- des installations appartenant à l'Electricité de France, société nationale, dont l'exploitation est également assurée par l'EDF.
- des installations appartenant à des industriels privés, et exploités par eux, dans lesquelles on ne compte toutefois qu'un seul exploitant de réacteur (la SENA, entreprise commune, exploitant de la Centrale franco-belge des Ardennes à Chooz).

La loi française du 30 octobre 1968, par son article 7 complètant l'article 10 de la Convention de Paris, impose aux exploitants d'avoir une assurance ou une autre garantie financière. Selon Vienne comme selon Paris, les conditions de l'assurance ou de la garantie financière sont déterminées par l'autorité publique compétente.

La loi française limite ses exigences à un agrément de la garantie financière (et non de l'assurance) par le Ministre de l'économie et des finances. En fait les polices d'assurance nucléaire sont, comme toutes

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* An English translation is available on microfiche and can be ordered from the IAEA, Vienna, under reference number IAEA-Lang-E1. The price is US $0.65 payable in advance or by an IAEA microfiche service coupon.

les polices d'assurance, examinées par la Direction des assurances qui fait partie du même Ministère des finances, et il existe depuis peu un texte type de conditions générales d'assurance de responsabilité civile d'exploitant nucléaire qui a reçu le visa de cette Direction à la date du 20 octobre 1969.

Nous n'avons pas encore en France d'expérience pratique pour des garanties financières autres que l'assurance (caution bancaire, portefeuille de valeurs, patrimoine mobilier et immobilier, avoirs liquides). Certains auteurs pensent même que la possibilité d'autres garanties que l'assurance est un peu une hypocrisie.

Actuellement donc ne sont pratiquées en France que (a) l'assurance privée, pour les industriels privés, (b) pour les services publics (CEA/EDF), une combinaison assurance privée et garantie de l'Etat, par application des dispositions de l'article 7 de la loi du 30 octobre 1968 selon lesquelles le ministre de l'économie et des finances, sur proposition du ministre chargé de l'énergie atomique, est habilité à donner aux exploitants d'installations nucléaires la garantie de l'Etat, qui se substituera en tout ou en partie à une assurance ou à une autre garantie financière.

Enfin en ce qui concerne l'assurance proprement dite, les compagnies d'assurance, comme à chaque fois qu'elles se sont trouvées en présence d'un risque nouveau comportant de nombreuses inconnues, nécessitant une garantie d'une grande ampleur et pouvant avoir éventuellement des implications internationales, ont agi en deux temps: primo, en prévoyant l'exclusion du risque nucléaire de toutes les polices classiques; secundo, en créant des pools d'assurance nucléaire.

C'est ainsi qu'après les Pools américains, on a vu naître en Europe un Pool britannique, un Pool suédois, puis un Pool français en mars 1959. Les sociétés françaises ont ainsi cessé de couvrir le risque nucléaire à compter du 1er octobre 1959, date d'entrée en fonctionnement du Pool. Ce Pool est un organisme de co-réassurance, groupant toutes les compagnies françaises et la quasi-totalité des compagnies étrangères agréées en France, y compris les compagnies d'assurance maritime, soit une centaine de sociétés au total.

1. ASSURANCE DOMMAGES

Considérée avec les yeux de l'exploitant, l'assurance «dommages» des installations nucléaires se présente de la même façon que l'assurance dommages de n'importe quelle installation industrielle traditionnelle, sous la seule réserve de l'aspect particulier «amortissement des installations» qui compte sans aucun doute parmi les plus rapides de ceux que l'on puisse connaître dans les autres secteurs de l'industrie – tout au moins pour les réacteurs et les autres grands appareils.

Cette donnée particulière peut conduire aux solutions extrêmes:

- à la non assurance des installations, ce qui implique en cas de sinistre, ou abandon d'exploitation, soit utilisation de réserves de propre assureur préalablement constituées, soit recours à tout autre mode de financement possible
- à l'assurance la plus complète, c'est-à-dire, en valeur de reconstruction à neuf au jour du sinistre, basée sur une valeur d'existences calculée, amortissements non déduits.

Il faut signaler ici une préoccupation particulière pour l'exploitant en ce qui concerne l'assurance des dommages aux biens, du fait que les Conventions (Paris ART.3a - Vienne ART.IV-5a) lui retirent toute responsabilité «pour les biens qui se trouvent sur le site de cette installation et qui sont ou doivent être utilisés en rapport avec elle» sans qu'il puisse en être rendu responsable à un autre titre en dehors des Conventions, lesquelles ne prévoient une telle possibilité que pour les dommages en cours de transport et non pour les biens sur le site (Paris ART.6 c ii - Vienne ART.IV-7b).

Hormis le cas très hypothétique où l'industriel propriétaire de biens dans cette situation accepterait de rester son propre assureur, l'exploitant verra donc figurer dans les offres de travaux et de fournitures avec intervention sur le site un poste «assurance dommages» pour les biens de cet industriel, à moins qu'il n'apparaisse économiquement plus avantageux de souscrire pour le compte des propriétaires une garantie annexe «dommages» s'appliquant à l'ensemble des biens des tiers sur le site.

En France l'article 12 de la loi du 30 octobre 1968 prévoit que lorsqu'une installation est affectée principalement à une mission de service public, les dommages causés aux biens n'appartenant pas à l'exploitant, qui se trouvent sur le site où est implantée l'installation à l'origine de l'accident et qui sont ou doivent être utilisés en rapport avec elle, sont réparés par l'Etat pour la partie excédant 25 millions de francs (franchise à la base) dans la limite d'une indemnisation totale de l'ensemble des victimes à concurrence de 600 millions de francs.

Pour la franchise de 25 millions, elle reste à la charge de l'industriel, sauf accord contractuel dérogatoire. Ainsi le CEA accepte-t-il de prendre à sa charge les dommages nucléaires causés à la fourniture (l'essentiel en général parmi les biens sur le site) sans s'en rapporter à la notion de transfert de propriété.

Comment assurer les installations contre les dommages nucléaires? Par la souscription des polices du Pool français d'assurance des risques atomiques, auprès de son assureur classique.

A cet égard, la situation en France est la suivante:

- le CEA établissement public, garantissant sa responsabilité civile vis-à-vis des tiers, ne s'assure pas pour les dommages à ses propres installations
- l'EDF non plus, malgré quelques tentatives, en raison du montant jugé trop élevé des primes demandées
- les cas d'assurance sont donc limités à quelques industriels privés, plutôt d'ailleurs sous forme d'extension des garanties existantes à la couverture de l'aggravation «nucléaire» que sous forme de police nucléaire particulière.

En effet les possibilités d'assurance sont différentes en fonction de la nature des installations à garantir:

A. Aux termes des Conditions générales type du Pool réservées en fait aux exploitants de réacteurs, l'exploitant pourra obtenir la couverture des risques suivants:

- l'incendie, la foudre, les explosions de toute nature
- les conséquences d'une température excessive à l'intérieur d'un réacteur, si l'accroissement de cette température présente un caractère accidentel, c'est-à-dire soudain, fortuit et involontaire

- la contamination radioactive, à l'exclusion de celle subie par tout ce qui se trouve à l'intérieur de la protection biologique du réacteur, et à l'exclusion des circuits primaires de refroidissement
- les frais de décontamination et d'isolation indispensables pour la décontamination.

La garantie pourra être étendue sur demande de l'exploitant:

- aux frais de déblais et de démolition, aux frais de décontamination des décombres
- aux dommages de contamination, et frais accessoires, des autres biens dans l'établissement
- aux frais de décontamination du sol et de la végétation
- à la perte accidentelle du modérateur.

La prime sera fonction de nombreux facteurs tels que:

- le type du réacteur et sa puissance thermique nominale
- la réactivité maximale possible
- la stabilité du réacteur
- la pression à l'intérieur du cœur et la température du fluide refroidisseur à la sortie du cœur
- la nature du combustible
- l'efficacité des dispositifs de contrôle et de sécurité
- l'usage du réacteur
- l'organisation de la prévention et des secours.

Un problème reste posé: celui de la capacité du Pool, souvent insuffisante pour couvrir des installations pouvant valoir de 300 à 500 millions de francs.

B. Pour les installations autres que les réacteurs, il est nécessaire de négocier une police sur mesure cas par cas, eu égard à la nature de l'installation, qu'il s'agisse d'une véritable installation nucléaire au sens des Conventions ou non.

Suivant le cas, ou bien le Pool délivrera une police nucléaire particulière, ou bien il donnera une garantie nucléaire accessoire aux polices classiques existantes, couvrant la seule aggravation due à la radioactivité.

Quant aux autres branches d'assurance, elles ne sont pas encore pratiquées en France à ma connaissance: l'assurance bris de machines en raison d'obstacles techniques; l'assurance pertes d'exploitation en raison de ce que de toutes façons elle n'a de signification que pour les exploitants privés réalisant des bénéfices.

2. ASSURANCE RESPONSABILITE CIVILE

Du fait des Conventions, l'exploitant est tenu d'avoir une garantie financière; il aura recours a priori à la forme la plus commode, l'assurance. Sa préoccupation dans ce domaine sera donc de rechercher une assurance strictement conforme à l'obligation légale:

- pour les accidents survenant dans son installation
- pour les accidents survenant en cours de transport de matières nucléaires
- pour les accidents causés par des matières confiées par lui à un titre quelconque à des industriels n'ayant pas la qualité d'exploitant.

Cette exigence portera:

A. Pour les accidents survenant dans son installation:

- sur une garantie correspondant au montant de sa responsabilité, ou de la part de responsabilité restant à sa charge s'il bénéficie d'une participation de l'Etat
- sur une garantie par accident, sinon, immédiatement reconstituable en cas d'accident, pour que le montant exigible soit toujours disponible. Les conditions générales type du Pool français prévoient une limite par accident de 50 millions au maximum et une limite pour l'ensemble des installations d'un même exploitant sur un même site de 100 millions par période de trois ans, sauf reconstitution d'un commun accord, avec engagement de l'assureur de s'efforcer à cette reconstitution
- sur une garantie sans exclusions autres que celles prévues dans les Conventions (Paris ART. 9 - Vienne ART. IV-3a: actes de conflit armé, hostilités, guerre civile, insurrection, et, sauf exception de la législation du pays de l'installation, cataclysmes naturels de caractère exceptionnel) à moins qu'une garantie d'état n'ait été accordée aux exploitants pour les exclusions maintenues (par exemple engins de guerre, déchets immergés...).

B. Pour les accidents survenant en cours de transport de matières nucléaires:

L'exploitant devra se préoccuper de résoudre le problème du transfert de responsabilité par voie contractuelle ou par prise en charge assortie d'une preuve (Paris ART. 4a et b - Vienne ART. II-1b et c).

Suivant ses besoins, il souscrira soit une police par transport, soit une police d'abonnement avec déclarations de transport périodiques a posteriori.

Il devra là aussi veiller à ce que la garantie lui soit accordée par accident, à défaut par transport pour un montant correspondant au moins au double du montant de sa responsabilité par accident (pour avoir au moins deux accidents garantis par transport).

C. Pour les accidents causés par des matières se trouvant chez des industriels n'ayant pas la qualité d'exploitant (Paris ART. 5 c - Vienne ART. II-1 b, c) et pour lesquels subsiste, à défaut de prise en charge par un autre exploitant, la responsabilité de l'exploitant expéditeur.

Cette situation devra faire l'objet d'accord contractuel prévoyant soit la couverture de la responsabilité de l'exploitant dans la police de l'industriel, soit plus simplement une extension de la police de l'exploitant à la garantie des dommages résultant d'accidents causés par ces matières au cours de leur détention.

C'est là un problème complexe encore mal résolu qui oblige à un inventaire permanent des matières nucléaires (et des appareils contaminés renvoyés en usine) pour parvenir à répondre aux exigences des assureurs qui désirent connaître outre la nature et la quantité des produits, le temps de détention, leur localisation avec descriptif des locaux, l'estimation de valeur de ces locaux et le nombre de personnes appelées à y travailler.

La tarification de ces polices de responsabilité civile repose, en ce qui concerne les réacteurs, sur les mêmes éléments que les polices dommages auxquels viennent s'ajouter des facteurs relatifs au site, à l'environnement, à l'importance de la population, des installations industrielles avoisinantes, etc. Pour les autres installations la prime peut être soit une prime technique, comme pour les réacteurs, soit une prime forfaitaire basée sur les salaires ou le chiffre d'affaires.

CONCLUSIONS

Tous ces problèmes ont été évoqués dans l'hypothèse la plus simple d'un exploitant qui serait à la tête d'une seule installation nucléaire. En fait on se trouvera vraisemblablement bien plus souvent en présence de sites nucléaires comportant une ou plusieurs installations nucléaires côtoyant des installations n'ayant pas le caractère d'installations nucléaires.

Tout exploitant d'installation nucléaire de quelque importance aura donc à se préoccuper d'assurer:

- sa responsabilité civile d'exploitant au sens des Conventions nucléaires
- sa responsabilité civile d'ordre nucléaire mais selon le droit commun, soit en annexe à sa police d'exploitant nucléaire, soit par une police séparée
- sa responsabilité civile nucléaire en dehors de ses installations, tant au titre des Conventions nucléaires qu'au titre du droit commun, durant les opérations de transport et chez les industriels n'ayant pas la qualité d'exploitant.

A côté de ces exploitants en titre, d'autres pourront avoir à rechercher des garanties d'ordre nucléaire, parmi lesquels il faut principalement citer d'une part les exploitants d'accélérateur de particules (hors Conventions nucléaires), d'autre part les détenteurs de biens contaminés confiés à titre temporaire (quand ils ne sont pas garantis par l'exploitant propriétaire), les détenteurs et utilisateurs de radio-éléments (laboratoires de recherches, médecins, hopitaux, fabricants et utilisateurs d'appareils de gammagraphie, etc.).

Si le Pool français délivre bien évidemment des polices adaptées à chaque particulier, certains de ces risques nucléaires accessoires trouvent également preneur parmi quelques compagnies étrangères qui accordent des garanties nucléaires par extension aux polices de responsabilité civile classique d'entreprise.

L'ASSURANCE «BRIS DE MACHINES» DANS LES INSTALLATIONS NUCLEAIRES*

F. LACROIX
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1. REMARQUES PRELIMINAIRES

La plupart des polices de dommages matériels émises par les assureurs nucléaires couvrent les périls suivants: incendie, explosion, foudre, chute d'avions, température excessive à l'intérieur du réacteur et contamination radioactive. La couverture des dommages de contamination radioactive se limite aux dégâts occasionnés par un échappement accidentel de radioactivité provoqué par une cause quelconque et engendrant dans les biens assurés une radioactivité excessive rendant tout ou partie de ceux-ci impropres à l'exploitation et nécessitant leur abandon ou leur décontamination.

Ne sont pas couverts les dégâts causés par contamination radioactive graduelle résultant du fonctionnement normal ou de l'exploitation normale de l'installation. L'assureur ne peut absolument pas faire porter cette garantie sur les biens situés par exemple à l'intérieur de la cuve du réacteur où une contamination graduelle dont l'importance croît avec la durée d'utilisation des matériels est prévisible et normale.

2. L'ASSURANCE «BRIS DE MACHINES» EN GENERAL

D'une façon générale, on peut dire que l'assurance «bris de machines» consiste à couvrir les machines ou autres objets assurés contre tout dégât accidentel d'origine mécanique ou électrique.

A titre d'exemples, sont couverts les dégâts imprévisibles et soudains subis par les objets assurés et dus à l'une des causes suivantes:

- maladresse, négligence, inexpérience ou malveillance du personnel de l'assuré ou de tiers
- vibration, dérèglage, mauvais alignement, desserrage de pièces, tension anormale, fatigue moléculaire, emballement ou survitesse, force centrifuge
- défaillance d'un dispositif de protection ou de régulation
- coup d'eau, surchauffe, manque d'eau dans les chaudières, appareils à vapeur
- effets du courant électrique par suite de surtension ou chute de tension, surintensité, court-circuit

Ne sont notamment pas couverts les dommages:

- dus à l'incendie, l'explosion, la foudre, la chute d'avions, etc., couverts par la police dommages matériels;

* An English translation is available on microfiche and can be ordered from the IAEA, Vienna, under reference number IAEA-Lang-E2. The price is US$0.65 payable in advance or by an IAEA microfiche service coupon.

- l'usure ainsi que les autres détériorations progressives ou continuelles résultant de l'action chimique, thermique ou mécanique d'agents destructeurs quelconques.

Dans l'assurance bris de machines chaque objet assuré est indiqué séparément avec le montant de la somme assurée et la franchise applicable. La somme assurée doit, pour chaque objet, être à tout moment égale à la valeur de remplacement à neuf c'est-à-dire au prix d'un objet neuf en tous points identique, acheté isolément et augmenté des frais d'emballage, de transport et de montage ainsi que des taxes et droits éventuels.

3. L'ASSURANCE BRIS DE MACHINES DANS LES INSTALLATIONS NUCLEAIRES

3.1. Du point de vue de l'assurance bris de machines une installation nucléaire peut être subdivisée en trois zones:

- la zone de radioactivité élevée c'est-à-dire la cuve ou toute structure contenant le cœur (y compris ses supports et son blindage) et tout son contenu, les éléments de combustible et les barres de contrôle. L'étendue exacte de cette zone doit être définie avec précision pour chaque type de réacteur.
- la zone de radioactivité faible comprenant les composants du réacteur se trouvant en-dehors de la zone de radioactivité élevée, mais en contact avec la radioactivité du circuit primaire de refroidissement ou toute autre radioactivité et où, compte tenu du niveau des radiations, des précautions spéciales sont nécessaires quand des inspections ou des réparations sont effectuées.
- la zone de radioactivité nulle comprenant toute autre partie du site.

(la répartition des équipements entre les trois zones est reprise dans l'annexe pour quelques types de réacteur).

3.2. L'assurance des risques bris de machines dans les zones de radioactivité élevée et faible présente des particularités du fait de l'existence d'une certaine radioactivité dans ces zones.

La réparation des matériels endommagés exige une décontamination préalable et l'utilisation de techniques de manutention spéciales (maniement à distance, écrans, vêtements protecteurs, personnel hautement qualifié) ce qui entraîne des frais additionnels et des frais de décontamination qui sont essentiellement les suivants:

- frais à exposer pour permettre d'accéder aux objets endommagés, par exemple pour la réparation ou le déplacement des parois de protection;
- frais à exposer pour assumer la protection du personnel chargé de la réparation des dommages, e.g. vêtements de protection, périodes de repos ou limitation de l'exposition admissible aux radiations;
- frais à exposer pour tout travail indispensable à la réparation des dommages, e.g. frais de décontamination quand la contamination résulte du fonctionnement normal du réacteur;
- frais spéciaux résultant du fait que les objets endommagés doivent être remplacés au lieu d'être réparés et ce à la suite d'une contamination due au fonctionnement normal;
- frais dus à la nécessité d'effectuer une inspection après la réparation faite à la suite d'une perte ou d'un dommage indemnisable;
- frais de déblais et frais d'enlèvement des débris.

3.3. Jusqu'à présent, les assureurs bris de machines avaient accepté de couvrir les équipements de la cuve du réacteur et l'ensemble du circuit primaire sur la base d'une assurance ordinaire excluant les risques nucléaires.

En d'autres mots, un bris de machines affectant ces équipements est payé par les assureurs classiques sur la base d'un coût de réparation à du matériel classique, à l'exclusion de tous frais additionnels nécessités non seulement par l'activation de ce matériel, mais également par les protections spéciales à prendre, du fait de son activation.

Remarquons toutefois que dans certains marchés, ces assureurs ont accepté de couvrir les frais additionnels jusqu'à concurrence d'un montant limité. Dans la solution adoptée, les frais additionnels et les frais de décontamination devaient en principe être pris en charge par les pools atomiques. Devant les inconvénients qui, au moment d'un règlement de sinistre, peuvent résulter de la coexistence de deux couvertures accordées par des assureurs différents, un principe a été admis.

L'assurance bris de machines doit comporter la couverture des frais additionnels et des frais de décontamination. La couverture complète (bris de machines, frais additionnels et frais de décontamination) doit, dans les zones de radioactivité élevée et faible, être assumée par un seul et même assureur ou groupe d'assureurs.

3.4. Ces risques sont-ils assurables?

- Dans la zone de radioactivité nulle, les risques bris de machines sont analogues à ceux rencontrés dans les installations conventionnelles.
- Dans la zone de radioactivité faible, les risques bris de machines sont en principe assurables. Les experts techniques estiment, en effet, que ces risques ne sont pas différents de ceux rencontrés dans les centrales conventionnelles et que les frais additionnels et les frais de décontamination ne représenteront vraisemblablement qu'une faible partie du coût total de la réparation.
- Certains assureurs estiment que dans l'état actuel de nos connaissances il ne serait pas sage de couvrir le bris de machines et les frais associés dans la zone de radioactivité élevée. Ces assureurs considèrent que vu le manque d'informations disponibles, aucune appréciation sérieuse du risque n'est possible et qu'en conséquence il n'existe que peu ou pas de possibilités de souscrire ce risque avec une prime réaliste. D'autres assureurs au contraire pensent qu'un montant limité de couverture peut être accordé sur la base d'un premier risque avec des franchises adéquates et une sélection prudente des composants assurables. Ces assureurs sont arrivés à cette conclusion par suite de l'existence de couvertures limitées dans certains marchés et du fait des pressions exercées par les exploitants en vue d'obtenir cette assurance.

3.5. Ces risques étant en principe assurables dans les conditions développées ci-dessus, le problème se pose de déterminer l'assureur compétent:

- Dans la zone de radioactivité nulle, la couverture des risques bris de machines est normalement assumée par les assureurs spécialisés du marché ordinaire.

- Dans les zones de radioactivité élevée et faible, compte tenu du caractère particulier de l'assurance bris de machines qui exige des connaissances techniques approfondies, la plupart des assureurs estiment que cette couverture doit être confiée dans sa totalité aux spécialistes du marché ordinaire. Toutefois, comme dans les circonstances actuelles, les traités habituels de réassurance comportent une clause d'exclusion des risques nucléaires, les possibilités des assureurs bris de machines sont limitées à leur capacité propre de rétention, en particulier pour la couverture des frais additionnels et des frais de décontamination. Aussi, certains pools envisagent-ils d'accorder la couverture complète, dans les zones de radioactivité faible et élevée, dans les cas où le marché ordinaire ne pourrait pas accepter ces risques.

ANNEX

ZONING OF NUCLEAR POWER REACTORS FOR MACHINERY BREAKDOWN RISKS

PRESSURIZED WATER REACTOR

High radioactive zone

Reactor pressure vessel
Reactor internals
Fuel
Control rods

Low radioactive zone

Heat exchangers
Pressurizers
Circulating pumps
Auxiliary circuits
Control mechanism for control rods
Loading machine and transfer machine
Travelling crane
Ventilation

Zero radioactive zone

Turbo alternators
Condensers
Control panel
Transformers
Pump and re-heaters

BOILING WATER REACTOR

High radioactive zone

Reactor pressure vessel
Reactor internals
Fuel
Control rods
Control mechanism for control rods

Low radioactive zone

Steam drum
Turbine[1]
Condensers[1]
Feed pumps
Re-heaters
} Primary circuit

Auxiliary circuits
Loading machine and transfer machine
Travelling crane
Ventilation

Zero radioactive zone

Alternators
Control panels
Transformer
Cooling water pumps and equipment

GAS-COOLED REACTOR (Magnox)

	Steel pressure vessel	Concrete pressure vessel
High radioactive zone	Reactor pressure vessel	Parts of reactor pressure vessel unshielded (e.g. top inside boiler shield wall)
	Graphite core	Boiler shield wall
	Fuel	Fuel
	Control rods	Control rods
Low radioactive zone	Boilers	Boilers
	Gas ducting	Parts of pressure vessel shielded from direct radiation
	Gas circulators	Gas circulators
	CO_2 clean-up circuit	CO_2 clean-up circuit
	Charge/discharge machines	Charge/discharge machines
Zero radioactive zone	Turbo alternators	Turbo alternators
	Condensers	Condensers
	Feed pump	Feed pump
	Re-heaters	Re-heaters
	Transformers	Transformers
	Control panels	Control panels

[1] Although these items are in the primary circuit, experience indicates that any contamination present only contains isotopes with a short half-life and that the limiting time for repairs is that necessary to open up the casing. Any additional costs and decontamination costs which may arise in normal operation will be very small compared with the costs of opening up.

HEAVY-WATER-COOLED AND -MODERATED (Pickering type) REACTOR

High radioactive zone

- Calandria vessel
- Pressure tubes
- Control rods

Low radioactive zone

- Heavy-water moderator and coolant
- Heat exchangers
- Circulating pumps
- Auxiliary circuits
- Control rod operating mechanism
- Fuelling machines
- Reactor building ventilation system
- Dump tank

Zero radioactive zone

- Turbo alternators
- Condensers
- Control equipment
- Transformers
- Re-heaters
- Cooling water equipment
- Vacuum building, vacuum pumps and associated equipment

TAXATION AND DETERMINATION OF NUCLEAR INSURANCE RESERVES

A note by the Secretariat of the IAEA

Nuclear risk insurance, although in principle comparable with loss and injury insurance, differs considerably because of the exceptional magnitude and multiplicity of the damage which can result from a single incident, the small number of nuclear installations, the possibility of deferred damage and the aggravation of personal injuries in the course of time. Because of these circumstances it is not possible for the insurers to apply to nuclear risk insurance the technique which is normally employed in insurance: to balance a large number of independent risks in each annual period.

Therefore the insurers have to establish large technical reserves. These technical reserves, being established for "unexpired risks" and "outstanding claims", have been the object of high taxation in several countries. The Organisation for Economic Co-operation and Development (OECD), considering that an effective protection against hazards by means of insurance is necessary for any industrial engagement, recommended in 1961 to its Member countries to give technical reserves and premiums relating to nuclear insurance the most favourable tax treatment, the tax for premiums in no case to exceed 5%. This recommendation has been followed to a large extent.

The "Standing Commission on the Atomic Risk" of the European Insurance Committee (i.e. the insurers' union) has raised new ideas relating to the determination and taxation of technical reserves in nuclear risk insurance. Some insurers consider it necessary to establish an additional special technical reserve composed of (a) a stabilization or catastrophe reserve and (b) a contingency reserve to offset unfavourable variance between real costs and predicted costs. The amount should be fixed in such a manner as to meet all claims arising out of a single major incident. These insurers propose that this special technical reserve as well as the above mentioned technical reserve should be exempt from all taxation.

The insurers' note was examined by the Insurance Committee of OECD in July 1969. The Committee decided to ask the insurers to modify their note taking into account the opinions expressed. After being modified it will be transmitted for further consideration to the Fiscal Committee of OECD.

DETERMINATION DES RESERVES TECHNIQUES EN MATIERE D'ASSURANCE DES RISQUES ATOMIQUES *

COMITE EUROPEEN DES ASSURANCES
Commission permanente du risque atomique,
Bruxelles, Belgique

L'exploitation d'une activité économique exige que l'industrie se protège contre les aléas par des assurances. Il en est de même pour l'industrie nucléaire. Il est de la vocation de l'assurance privée de mettre tout en œuvre pour résoudre les problèmes nouveaux qui se posent à elle, afin de favoriser le développement souhaité par les Etats de cette activité nouvelle.

Le rôle de l'assurance dans le domaine de l'industrie nucléaire est de couvrir l'ensemble des risques nucléaires, c'est-à-dire:

- la responsabilité civile de l'exploitant au sens de la Convention de Paris et des lois nationales d'application;
- les dégâts matériels aux installations;
- dans certains cas, les accidents du travail et les risques complémentaires.

Les risques nucléaires, bien qu'encore peu connus, se caractérisent par:

- L'ampleur exceptionnelle et la multiplicité des dommages qui peuvent survenir à la suite d'un seul sinistre.
- Le petit nombre d'installations nucléaires existantes ou dont la construction est prévue dans les prochaines années. Ce fait ne permet pas d'appliquer maintenant, et sans doute encore pendant plusieurs années, à l'assurance des risques nucléaires la technique normale de l'assurance qui est fondée sur un système de compensation annuelle entre un grand nombre de risques indépendants; la seule compensation que l'on peut espérer pratiquer dans ce domaine est une compensation établie dans le temps.
- Les effets différés des dommages pouvant résulter d'un accident nucléaire les assureurs restent engagés pendant 10 ans après l'accident nucléaire.
- L'aggravation des lésions dans le temps: une lésion apparaissant comme bénigne pouvant se révéler infiniment plus grave dans la suite.

Les caractéristiques des risques nucléaires entraînent la nécessité pour les assureurs de fournir des garanties d'un montant particulièrement élevé, ce qui a exigé de leur part:

- une collaboration étroite à la fois sur le plan national et sur le plan international par la création des pools d'assurances nucléaires
- des efforts particuliers, dépassant les limites tracées par la technique normale, pour prendre dans ces risques des participations très élevées pouvant atteindre jusqu'à vingt fois leur participation habituelle qu'ils conservent à leur charge, c'est-à-dire sans réassurance.

Pour honorer leurs engagements, les assureurs doivent constituer des réserves techniques. On a coutume de définir comme réserves techniques

* An English translation is available on microfiche and can be ordered from the IAEA, Vienna, under reference number IAEA-Lang-E3. The price is US$0.65 payable in advance or by an IAEA microfiche service coupon.

les postes passifs du bilan des compagnies d'assurances qui correspondent à autant d'obligations soit simplement «probables» (dites réserve de primes ou réserve pour risques en cours), soit «certaines» dans leur teneur juridique, mais «incertaines» quant au moment de leur liquidation effective et au montant précis de cette liquidation (elles sont dites réserve pour sinistres à régler).

A ces deux rubriques fondamentales du bilan, la plupart des assureurs nucléaires estiment qu'il faut ajouter une réserve technique spéciale constituée par

- une réserve d'équilibrage ou de catastrophe particulièrement nécessaire pour les assurances nucléaires dans lesquelles le déroulement des fréquences et des intensités des dommages est variable – voire même catastrophique
- une réserve de sécurité destinée à pallier les écarts défavorables entre les coûts réels et les prévisions. Cette dernière réserve est particulièrement importante dans l'assurance nucléaire à cause des effets différés des dommages dus à un accident nucléaire et à l'aggravation des lésions dans le temps.

La constitution de cette réserve est considérée par eux comme le seul moyen de rendre possible dans le temps l'exercice d'une branche qui manque des données statistiques nécessaires à l'application des lois fondamentales sur lesquelles est fondée l'assurance. La compensation des résultats ne pourra, dans cette branche, s'effectuer qu'au cours d'une longue période dépassant de beaucoup l'exercice fiscal. Il est donc nécessaire d'adapter le système de compensation dans le temps à l'obligation d'arrêter les bilans chaque année. A cette fin ils considèrent qu'il est indispensable de constituer une «réserve technique spéciale», qui permet en outre d'éviter, dans une certaine mesure, qu'en cas de sinistre nucléaire important, il ne soit fait appel aux autres disponibilités des assureurs, qui servent à la sauvegarde des droits des assurés des autres branches.

D'autres assureurs nucléaires ont exprimé des doutes à ce sujet. Ils se demandent si l'adoption d'un système uniforme qui serait recommandé sur le plan international est de nature à répondre au mieux à leurs besoins. A leur point de vue des dispositions nationales particulières pourraient être mieux appropriées; elles pourraient tenir compte entre autres de la dimension du marché, du régime fiscal particulier dont ils bénéficient déjà, ainsi que des prescriptions nationales concernant les réserves.

Les assureurs nucléaires qui préconisent la constitution d'une réserve technique spéciale considèrent que la réserve pour risques en cours, la réserve pour sinistres à régler et la réserve technique spéciale forment la vraie réserve technique qui doit, en toute logique, échapper à toute imposition fiscale.

L'absence des données statistiques ne leur permet pas de calculer le montant de la réserve technique spéciale qui doit être évalué de façon plus ou moins forfaitaire. Bien que, théoriquement, plusieurs accidents nucléaires puissent se produire successivement à des intervalles de temps très courts, ces assureurs nucléaires pensent que la réserve spéciale devrait être fixée de façon à leur permettre de faire face au minimum à un seul sinistre important. Ils proposent en conséquence qu'une somme égale à la rétention maximale qu'un assureur a souscrit sur l'ensemble des risques d'une seule installation nucléaire puisse être mise en réserve et exonérée d'impôts.

En fait, il ne s'agirait pas d'une exonération d'impôts puisque la matière imposable se reconstitue par le versement des primes venant alimenter chaque année le compte de Profits et Pertes.

NOTES ON NATIONAL LEGISLATION

BRAZIL (Note by A. C. Simões)

1. The traditional Brazilian legal system adopts the principle of guilt, an inheritance of Roman Law (Aquiliana Law), consecrated in the Napoleonic Code. The Brazilian Civil Code of 1916 is the legal document which regulates this matter, and under the country's system (Federal Republic) it is applicable throughout the national territory.

The absolute liability theory has, however, been adopted by special laws for certain activities involving risks to the community.

The first law in Brazil to adopt, in a certain way, the absolute liability principle, was that regulating the civil liability of railroads (Decree No. 2. 681 of 7 December 1912).

Other laws also adopted this principle, as for instance those relating to labour accidents (Decree Law No. 7. 036 of 1944, Decree Law No. 293 of 1967 and Act No. 5. 316 of 1967) and the Brazilian Air Code dealing with the liability of airlines (Decree Law No. 32 of 1966 and Decree Law No. 234 of 1967). To a certain extent the Brazilian Courts have also adopted the principle of absolute liability in other cases, on the basis of presumptive guilt by reversal of the onus of proof.

2. Specific legislation on civil liability for nuclear damage

Brazil has no specific legislation on third party liability for nuclear damage. Various studies were and are being carried out to introduce the basic principles of the Vienna Convention into national legislation.

In conformity with the Brazilian constitutional system, international conventions require a "referendum" of the National Congress; only after this are they promulgated by Decree of the President of the Republic to become part of the country's internal legislation.

The Vienna Convention is still going through the approval stage and consequently it has not yet been ratified by the Brazilian Government. When it has been promulgated and integrated into the national legislation it will be complemented by further legislation.

3. The organs which control private insurance in Brazil are as follows:

(a) National Council of Private Insurance: a governmental department that lays down the principles and policies of private insurance;
(b) Private Insurance Office: a governmental department that controls the constitution, organization and operation of insurance companies;
(c) Brazilian Re-insurance Institute: a governmental body, under private law, which controls and operates co-insurance, re-insurance and retrocession within the country and abroad;
(d) Insurance Companies: private enterprises authorized to deal in private insurance;
(e) Insurance Agents: physical or legal persons authorized to promote insurance contracts between insurance companies and physical or legal persons under private law.

Brazilian legislation (Decree Law No. 73 of 1966) established the obligation of insuring in various fields, such as: personal damage to passengers in commercial aviation; civil liability for the owners of self-propelled vehicles for terrestrial, fluvial, lake or ocean transport; aircraft and transport systems in general; civil liability of builders in urban areas, etc.; however, the absolute liability of a nuclear installation operator and the question of financial cover are not included. In fact, no policy issued by an insurance company covers nuclear risks.

4. Ownership and operation of nuclear installations

The development of nuclear energy in Brazil, as far as the operation of nuclear installations is concerned, did not give rise to interest from private industry and has been directed by the Government itself, on its own account and at its own risk, and it is the Government that is responsible for compensation in the event of nuclear damage.

Nevertheless, this problem has now assumed great importance, since the Government has decided to install a 500-MW power reactor in the Central Southern Region; it will be operated by Eletrobrás (Brazilian Electricity Company), which is both a governmental enterprise and a joint stock company, with mixed capital, governed by private law principles.

In this connection, the Comissao Nacional de Energia Nuclear (Brazilian Nuclear Energy Commission) set up a group of experts with the participation of other departments concerned with this matter, to carry out studies on civil liability and financial warranties in general, particularly in relation to the installation of this first power reactor. The purpose is the elaboration of a draft law to bring the national legislation into line with the basic principles of the Vienna Convention.

With regard to financial warranty, the study group has experienced difficulty owing to the lack of data which would allow an evaluation of the risk of nuclear accidents and the calculation of premium and insurance values. Furthermore, the economic limitation of the Brazilian insurance companies and the lack of experience in this specialized branch would probably necessitate the transfer of part of the insurance to foreign enterprises with a consequent heavy currency disbursement.

The effect of the insurance premium on power cost has received special attention from the study group in order to ensure that the power produced is not so expensive to rule out the competitiveness of nuclear plants compared with conventional ones.

These difficulties may lead to the adoption of a mixed system of financial warranty, in which part of the third party liability would be covered by insurance, part by another kind of warranty (caution) and part by a State warranty. These studies will have to be completed in the near future in view of the need to elaborate a basic legal structure for building and operating the power reactor in the Central Southern Region.

FINLAND (Note by T. Suontausta)

1. On 21 October 1969 the Committee on Nuclear Liability completed the draft of an Act on Nuclear Liability. The draft presupposes that Finland becomes a party to the Convention on Third Party Liability in the Field of

Nuclear Energy, signed in Paris on 29 July 1960, and the Convention supplementary to the Convention of 1960, signed in Brussels on 31 January 1963, but technically the Act may be brought into force gradually, pending the international coming into effect of the Convention of 1963.

It is expected that the Finnish Government will deal with this matter in the near future.

2. The above-mentioned Act on Nuclear Liability, as proposed by the Committee, has been drafted with Nordic legislative collaboration, and thus the draft is materially - with the exception of some minor details - of the same content as the Act on Nuclear Liability brought into force in Sweden in 1968, and the Danish and Norwegian drafts. During the inter-Scandinavian drafting conferences the national committees have assumed that the Nordic countries would become parties to both the Paris and the Vienna Conventions. In accordance with this standpoint, the Report of the Committee includes another draft in the event that active consideration were given to the domestic application of the Vienna Convention and its optional Protocol as a result of the coming into force of the Vienna Convention, as would be highly desirable.

3. On 24 May 1968 a bilateral agreement on collaboration in the field of peaceful utilization of nuclear energy was signed between Finland and Great Britain, and a similar agreement was signed with Sweden on 15 October 1968. Both these agreements contain provisions to the effect that the parties consider it desirable to apply as soon as possible internationally agreed rules on the measures to be taken in order to effect compensation and economic security in regard to damage caused through the peaceful utilization of nuclear energy. An agreement was also signed with the USSR on 14 May 1969, on collaboration in the field of peaceful utilization of nuclear energy, and this agreement contains rules on liability for damages which are based on the principle of reciprocity.

Closely connected with nuclear liability are those enactments which concern safety. In this connection, mention should be made of the Radiation Protection Act of 26 April 1957, amended by an Act of 8 January 1965, the Statutory Order on Radiation Protection of 27 September 1957, amended by an Order of 19 September 1968, and the Statutory Instrument on Radiation Protection issued by the Ministry for Social Affairs and Public Health on 5 November 1968. This Instrument contains detailed provisions on the radiation doses and the content limits of radioactive nuclear substances in respect of persons performing work under exposure to radiation, exemption from safety authorization, inspection and supervision, and other safety provisions concerning radiographic installations and plants as well as radioactive materials. Safety regulations are further included in the Atomic Energy Act of 25 July 1957, in the Statutory Order on Atomic Energy of 14 February 1958, and in the Act on the Prevention of Pollution of the Seas of 5 March 1968.

REPUBLIC OF KOREA

At present there are two laws relating to nuclear energy in the Republic of Korea; a law concerning the construction and operation of reactors and

a law on compensation for nuclear damage. Moreover, an indemnity law is now being drafted.

The Nuclear Damage Compensation Law (Law No 2094) promulgated on 14 January 1969 provides for the liability without fault of the operator of a nuclear installation or a person licensed to use fissionable material. Financial security as approved by the Minister of Science and Technology must be provided within the limit of 1500 million Won as determined by Presidential Decree. Provision is also made for an indemnity agreement between the Government and the nuclear operator; detailed provisions in this respect are to be established by a separate law.

Construction of a 500-MW nuclear power plant is scheduled to begin in 1970.

REPUBLIC OF THE PHILIPPINES

An Act Providing for the Licensing and Regulation of Atomic Energy Facilities and Materials, Establishing the Rules on Liability for Nuclear Damage, and for Other Purposes (Republic Act No. 5207) was approved in 1968 and took effect on 15 May 1969, 10 days after its publication in the Official Gazette. The Act gives authority to the Philippine Atomic Energy Commission to issue licences with respect to atomic energy facilities and materials, and to establish and issue regulations and orders for the protection of the health and safety of workers and of the general public, and to make inspections to ensure compliance with such requirements. The Act sets forth the various basic requirements for the issue of licences, including rules of administrative procedure and judicial review.

Provision is made for the absolute and exclusive liability of the operator of a nuclear installation. Liability is limited to an amount in Philippine Pesos which is equivalent to US$ 5 million for any one nuclear incident. The operator must secure and maintain insurance or other financial security covering his liability for nuclear damage under the Act and this is, in fact, a condition for the granting of a licence.

To the extent that the yield of insurance or other financial security is inadequate to satisfy claims, the Government shall indemnify the operator within the maximum limit of his liability. Where damage exceeds the limit of liability, a procedure is established with a view to the Government's providing additional funds for compensation.

BACKGROUND PAPERS

The following papers were also used by the Panel as background material. They have not been published in the present publication as the texts are included in Nuclear Law for a Developing World, Legal Series No. 5, IAEA, Vienna (1969).

1. Principles of civil liability for nuclear damage (J. P. H. Trevor).
2. The Brussels Supplementary Convention and its Joint Intergovernmental Security Fund (M. Lagorce).
3. Nuclear installations: insurance problems (A. C. Miles).
4. Insurance against nuclear risks in Europe (F. Lacroix).
5. Nuclear energy liability insurance in the United States of America (R. J. Fisher).

ANNEX 1

ATOMIC RISKS POOLS *

AUSTRIA	Verband der Versicherungsunternehmungen Österreichs Schwarzenbergplatz 7 1030 Vienna Telegrams: Assekuranzkanzlei Schwarzenbergplatz 7 1030 Vienna Telephone: Vienna 73 65 36
BELGIUM	Syndicat Belge d' Assurances Nucléaires 29 square de Meeus Brussels 4 Telegrams: Belgapool, Brussels Telephone: 010 322 136845
CANADA	Nuclear Insurance Association of Canada 410 St. Nicholas Street Suite 524 Montreal 125, P.Q.
DENMARK	Dansk Atomforsikrings Pool Grønningen 23 Copenhagen, K Telegrams: Transport, Copenhagen Telephone: Copenhagen 14-1367
FINLAND	Finsk Atomförsäkringspool Bulevarden 10 Helsinki, 1 Telegrams: Otso, Helsinki Telephone: Helsinki 1010
FRANCE	Pool Français d' Assurance des Risques Atomiques 118 rue de Tocqueville Paris 17e Telegrams: Pofaratom - Paris Telephone: 010 331 622 08-90/94 09-91/95
GERMANY	Deutsche Kernreaktor-Versicherungsgemeinschaft 5 Köln 1 Postfach 366 Theodor-Heuss-Ring 18 Telephone: 010 49 221 734844
ITALY	Pool Italiano per l' Assicurazione dei Rischi Atomici Via E. Petrolini 2 I 00197-Roma Telegrams: Atomiass, Rome Telephone: 010 396 804441

* List established on 1 April 1968 and communicated by the European Insurance Committee.

JAPAN	Japan Atomic Energy Insurance Pool Ida Building 1 Yaesu 2-chome Chuo-ku, Tokyo Telegrams: Atompool, Tokyo Telephone: Tokyo 481-4286
NETHERLANDS	N.V. Bureau van de Nederlandse Pool voor Verzekering van Atoomrisico's p/a Assurantieconcern Stad Rotterdam Anno 1720 N.V. Postbus 100 Rotterdam Telegrams: Nedatoom, Rotterdam Telephone: 010 31 10 111720
NORWAY	Norsk Atomforsikringspool Bygdøy Allé 19 Oslo, 2 Telegrams: Atompool, Oslo Telephone: Oslo 566856
SOUTH AFRICA	South African Insurance (Nuclear Energy) Committee c/o The Insurance Associations 9th Floor, Harland House 17/19 Loveday Street Corner Marshall Street Johannesburg, P.O. Box 1141 Telegrams: Harmony, Johannesburg Telephone: Johannesburg 838-4881/4
SPAIN	Pool Atómico Español Calle de Sagasta 18 Apartado 1.070 Madrid 4 Telegrams: Poolatom, Madrid Telephone: Madrid 223-95-16
SWEDEN	Svenska Atomförsäkringspoolen Birger Jarlsgatan 2 Stockholm Ö. Telegrams: Nordpool, Stockholm Telephone: Stockholm 21 1675 21 5775 21 1975 21 7869
SWITZERLAND	Schweizer Pool für die Versicherung von Atomrisiken Mythenquai 60, Box 172 Zurich, 22 Telegrams: Atompool, Zurich Telephone: 010 41 51 258800

TURKEY	Turk Atom Sigorta Pool' U c/o Dogan Sigorta Anonium Sirketi Galata Karaköy Dogan Sigorta Building Istanbul P. O. Box Galata 76 Telegrams: Dogantas - Istanbul Telephone: Istanbul 44 47 10
UNITED KINGDOM	British Insurance (Atomic Energy) Committee Aldermary House Queen Street London, E.C.4 Telegrams: Britpool, London E.C.4 Telephone: 01-248 4477
UNITED STATES OF AMERICA	Nuclear Energy Property Insurance Association 85 John Street New York 38, N.Y. 10038 and 85 Woodland Street Hartford, Conn. 06102. Nuclear Energy Liability Insurance Association 85 John Street New York 38, N.Y. 10038 The Manager, Mutual Atomic Energy Liability Underwriters One East Wacker Drive Chicago Illinois 60601 Telephone: 467-4090 The Chairman Mutual Atomic Energy Reinsurance Pool c/o American Mutual Reinsurance Co. One East Wacker Drive Chicago Illinois 60601

ANNEX 2

VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE
Vienna, 21 May 1963

THE CONTRACTING PARTIES,

HAVING RECOGNIZED the desirability of establishing some minimum standards to provide financial protection against damage resulting from certain peaceful uses of nuclear energy,

BELIEVING that a convention on civil liability for nuclear damage would also contribute to the development of friendly relations among nations, irrespective of their differing constitutional and social systems,

HAVE DECIDED to conclude a convention for such purposes, and thereto have agreed as follows –

Article I

1. For the purposes of this Convention –

(a) "Person" means any individual, partnership, any private or public body whether corporate or not, any international organization enjoying legal personality under the law of the Installation State, and any State or any of its constituent sub-divisions.

(b) "National of a Contracting Party" includes a Contracting Party or any of its constituent sub-divisions, a partnership, or any private or public body whether corporate or not established within the territory of a Contracting Party.

(c) "Operator", in relation to a nuclear installation, means the person designated or recognized by the Installation State as the operator of that installation.

(d) "Installation State", in relation to a nuclear installation, means the Contracting Party within whose territory that installation is situated or, if it is not situated within the territory of any State, the Contracting Party by which or under the authority of which the nuclear installation is operated.

(e) "Law of the competent court" means the law of the court having jurisdiction under this Convention, including any rules of such law relating to conflict of laws.

(f) "Nuclear fuel" means any material which is capable of producing energy by a self-sustaining chain process of nuclear fission.

(g) "Radioactive products or waste" means any radioactive material produced in, or any material made radioactive by exposure to the radiation incidental to, the production or utilization of nuclear fuel, but does not in-

clude radioisotopes which have reached the final stage of fabrication so as to be usable for any scientific, medical, agricultural, commercial or industrial purpose.

(h) "Nuclear material" means –

(i) nuclear fuel, other than natural uranium and depleted uranium, capable of producing energy by a self-sustaining chain process of nuclear fission outside a nuclear reactor, either alone or in combination with some other material; and

(ii) radioactive products or waste.

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

(j) "Nuclear installation" means –

(i) any nuclear reactor other than one with which a means of sea or air transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose;

(ii) any factory using nuclear fuel for the production of nuclear material, or any factory for the processing of nuclear material, including any factory for the re-processing of irradiated nuclear fuel; and

(iii) any facility where nuclear material is stored, other than storage incidental to the carriage of such material;

provided that the Installation State may determine that several nuclear installations of one operator which are located at the same site shall be considered as a single nuclear installation.

(k) "Nuclear damage" means –

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

(ii) any other loss or damage so arising or resulting if and to the extent that the law of the competent court so provides; and

(iii) if the law of the Installation State so provides, loss of life, any personal injury or any loss of, or damage to, property which arises out of or results from other ionizing radiation emitted by any other source of radiation inside a nuclear installation.

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

2. An Installation State may, if the small extent of the risks involved so warrants, exclude any small quantities of nuclear material from the application of this Convention, provided that –

(a) maximum limits for the exclusion of such quantities have been established by the Board of Governors of the International Atomic Energy Agency; and

(b) any exclusion by an Installation State is within such established limits.

The maximum limits shall be reviewed periodically by the Board of Governors.

Article II

1. The operator of a nuclear installation shall be liable for nuclear damage upon proof that such damage has been caused by a nuclear incident –

(a) in his nuclear installation; or

(b) involving nuclear material coming from or originating in his nuclear installation, and occurring –

(i) before liability with regard to nuclear incidents involving the nuclear material has been assumed, pursuant to the express terms of a contract in writing, by the operator of another nuclear installation;

(ii) in the absence of such express terms, before the operator of another nuclear installation has taken charge of the nuclear material; or

(iii) where the nuclear material is intended to be used in a nuclear reactor with which a means of transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose, before the person duly authorized to operate such reactor has taken charge of the nuclear material; but

(iv) where the nuclear material has been sent to a person within the territory of a non-Contracting State, before it has been unloaded from the means of transport by which it has arrived in the territory of that non-Contracting State;

(c) involving nuclear material sent to his nuclear installation, and occurring –

(i) after liability with regard to nuclear incidents involving the nuclear material has been assumed by him, pursuant to the express terms of a contract in writing, from the operator of another nuclear installation;

(ii) in the absence of such express terms, after he has taken charge of the nuclear material; or

(iii) after he has taken charge of the nuclear material from a person operating a nuclear reactor with which a means of transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose; but

(iv) where the nuclear material has, with the written consent of the operator, been sent from a person within the territory of a non-Contracting State, only after it has been loaded on the means of transport by which it is to be carried from the territory of that State;

provided that, if nuclear damage is caused by a nuclear incident occurring in a nuclear installation and involving nuclear material stored therein incidentally to the carriage of such material, the provisions of sub-paragraph (a) of this paragraph shall not apply where another operator or person is solely liable pursuant to the provisions of sub-paragraph (b) or (c) of this paragraph.

2. The Installation State may provide by legislation that, in accordance with such terms as may be specified therein, a carrier of nuclear material or a person handling radioactive waste may, at his request and with the consent of the operator concerned, be designated or recognized as operator in the place of that operator in respect of such nuclear material or radioactive waste respectively. In this case such carrier or such person shall be considered, for all the purposes of this Convention, as an operator of a nuclear installation situated within the territory of that State.

3. (a) Where nuclear damage engages the liability of more than one operator, the operators involved shall, in so far as the damage attributable to each operator is not reasonably separable, be jointly and severally liable.

(b) Where a nuclear incident occurs in the course of carriage of nuclear material, either in one and the same means of transport, or, in the case of storage incidental to the carriage, in one and the same nuclear installation, and causes nuclear damage which engages the liability of more than one operator, the total liability shall not exceed the highest amount applicable with respect to any one of them pursuant to Article V.

(c) In neither of the cases referred to in sub-paragraphs (a) and (b) of this paragraph shall the liability of any one operator exceed the amount applicable with respect to him pursuant to Article V.

4. Subject to the provisions of paragraph 3 of this Article, where several nuclear installations of one and the same operator are involved in one nuclear incident, such operator shall be liable in respect of each nuclear installation involved up to the amount applicable with respect to him pursuant to Article V.

5. Except as otherwise provided in this Convention, no person other than the operator shall be liable for nuclear damage. This, however, shall not affect the application of any international convention in the field of transport in force or open for signature, ratification or accession at the date on which this Convention is opened for signature.

6. No person shall be liable for any loss or damage which is not nuclear damage pursuant to sub-paragraph (k) of paragraph 1 of Article I but which could have been included as such pursuant to sub-paragraph (k) (ii) of that paragraph.

7. Direct action shall lie against the person furnishing financial security pursuant to Article VII, if the law of the competent court so provides.

Article III

The operator liable in accordance with this Convention shall provide the carrier with a certificate issued by or on behalf of the insurer or other financial guarantor furnishing the financial security required pursuant to Article VII. The certificate shall state the name and address of that operator and the amount, type and duration of the security, and these statements may not be disputed by the person by whom or on whose behalf the certificate was issued. The certificate shall also indicate the nuclear material in respect of which the security applies and shall include a statement by the competent public authority of the Installation State that the person named is an operator within the meaning of this Convention.

Article IV

1. The liability of the operator for nuclear damage under this Convention shall be absolute.

2. If the operator proves that the nuclear damage resulted wholly or partly either from the gross negligence of the person suffering the damage or from an act or omission of such person done with intent to cause damage, the competent court may, if its law so provides, relieve the operator wholly or partly from his obligation to pay compensation in respect of the damage suffered by such person.

3. (a) No liability under this Convention shall attach to an operator for nuclear damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil war or insurrection.

(b) Except in so far as the law of the Installation State may provide to the contrary, the operator shall not be liable for nuclear damage caused by a nuclear incident directly due to a grave natural disaster of an exceptional character.

4. 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, such other damage shall, to the extent that it is not reasonably separable from the nuclear damage, be deemed, for the purposes of this Convention, to be nuclear damage caused by that nuclear incident. Where, however, damage is caused jointly by a nuclear incident covered by this Convention and by an emission of ionizing radiation not covered by it, nothing in this Convention shall limit or otherwise affect the liability, either as regards any person suffering nuclear damage or by way

of recourse or contribution, of any person who may be held liable in connection with that emission of ionizing radiation.

5. The operator shall not be liable under this Convention for nuclear damage –

(a) to the nuclear installation itself or to any property on the site of that installation which is used or to be used in connection with that installation; or

(b) to the means of transport upon which the nuclear material involved was at the time of the nuclear incident.

6. Any Installation State may provide by legislation that sub-paragraph (b) of paragraph 5 of this Article shall not apply, provided that in no case shall the liability of the operator in respect of nuclear damage, other than nuclear damage to the means of transport, be reduced to less than US $5 million for any one nuclear incident.

7. Nothing in this Convention shall affect –

(a) the liability of any individual for nuclear damage for which the operator, by virtue of paragraph 3 or 5 of this Article, is not liable under this Convention and which that individual caused by an act or omission done with intent to cause damage; or

(b) the liability outside this Convention of the operator for nuclear damage for which, by virtue of sub-paragraph (b) of paragraph 5 of this Article, he is not liable under this Convention.

Article V

1. The liability of the operator may be limited by the Installation State to not less than US $5 million for any one nuclear incident.

2. Any limits of liability which may be established pursuant to this Article shall not include any interest or costs awarded by a court in actions for compensation of nuclear damage.

3. The United States dollar referred to in this Convention is a unit of account equivalent to the value of the United States dollar in terms of gold on 29 April 1963, that is to say US $35 per one troy ounce of fine gold.

4. The sum mentioned in paragraph 6 of Article IV and in paragraph 1 of this Article may be converted into national currency in round figures.

Article VI

1. Rights of compensation under this Convention shall be extinguished if an action is not brought within ten years from the date of the nuclear incident. If, however, under the law of the Installation State the liability of the operator is covered by insurance or other financial security or by State funds for a period longer than ten years, the law of the competent court may provide that rights of compensation against the operator shall only be ex-

tinguished after a period which may be longer than ten years, but shall not be longer than the period for which his liability is so covered under the law of the Installation State. Such extension of the extinction period shall in no case affect rights of compensation under this Convention of any person who has brought an action for loss of life or personal injury against the operator before the expiry of the aforesaid period of ten years.

2. Where nuclear damage is caused by a nuclear incident involving nuclear material which at the time of the nuclear incident was stolen, lost, jettisoned or abandoned, the period established pursuant to paragraph 1 of this Article shall be computed from the date of that nuclear incident, but the period shall in no case exceed a period of twenty years from the date of the theft, loss, jettison or abandonment.

3. The law of the competent court may establish a period of extinction or prescription of not less than three years from the date on which the person suffering nuclear damage had knowledge or should have had knowledge of the damage and of the operator liable for the damage, provided that the period established pursuant to paragraphs 1 and 2 of this Article shall not be exceeded.

4. Unless the law of the competent court otherwise provides, any person who claims to have suffered nuclear damage and who has brought an action for compensation within the period applicable pursuant to 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.

5. Where jurisdiction is to be determined pursuant to sub-paragraph (b) of paragraph 3 of Article XI and a request has been made within the period applicable pursuant to this Article to any one of the Contracting Parties empowered so to determine, but the time remaining after such determination is less than six months, the period within which an action may be brought shall be six months, reckoned from the date of such determination.

Article VII

1. The operator shall be required to maintain insurance or other financial security covering his liability for nuclear damage in such amount, of such type and in such terms as the Installation State shall specify. The Installation State shall ensure the payment of claims for compensation for nuclear damage which have been established against the operator by providing the necessary funds to the extent that the yield of insurance or other financial security is inadequate to satisfy such claims, but not in excess of the limit, if any, established pursuant to Article V.

2. Nothing in paragraph 1 of this Article shall require a Contracting Party or any of its constituent sub-divisions, such as States or Republics, to maintain insurance or other financial security to cover their liability as operators.

3. The funds provided by insurance, by other financial security or by the Installation State pursuant to paragraph 1 of this Article shall be exclusively available for compensation due under this Convention.

4. No insurer or other financial guarantor shall suspend or cancel the insurance or other financial security provided pursuant to paragraph 1 of this Article without giving notice in writing of at least two months to the competent public authority or, in so far as such insurance or other financial security relates to the carriage of nuclear material, during the period of the carriage in question.

Article VIII

Subject to the provisions of this Convention, the nature, form and extent of the compensation, as well as the equitable distribution thereof, shall be governed by the law of the competent court.

Article IX

1. Where provisions of national or public health insurance, social insurance, social security, workmen's compensation or occupational disease compensation systems include compensation for nuclear damage, rights of beneficiaries of such systems to obtain compensation under this Convention and rights of recourse by virtue of such systems against the operator liable shall be determined, subject to the provisions of this Convention, by the law of the Contracting Party in which such systems have been established, or by the regulations of the intergovernmental organization which has established such systems.

2. (a) If a person who is a national of a Contracting Party, other than the operator, has paid compensation for nuclear damage under an international convention or under the law of a non-Contracting State, such person shall, up to the amount which he has paid, acquire by subrogation the rights under this Convention of the person so compensated. No rights shall be so acquired by any person to the extent that the operator has a right of recourse against such person under this Convention.

(b) Nothing in this Convention shall preclude an operator who has paid compensation for nuclear damage out of funds other than those provided pursuant to paragraph 1 of Article VII from recovering from the person providing financial security pursuant to that paragraph or from the Installation State, up to the amount he has paid, the sum which the person so compensated would have obtained under this Convention.

Article X

The operator shall have a right of recourse only –

(a) if this is expressly provided for by a contract in writing; or

(b) if the nuclear incident results from an act or omission done with intent to cause damage, against the individual who has acted or omitted to act with such intent.

Article XI

1. Except as otherwise provided in this Article, jurisdiction over actions under Article II shall lie only with the courts of the Contracting Party within whose territory the nuclear incident occurred.

2. Where the nuclear incident occurred outside the territory of any Contracting Party, or where the place of the nuclear incident cannot be determined with certainty, jurisdiction over such actions shall lie with the courts of the Installation State of the operator liable.

3. Where under paragraph 1 or 2 of this Article, jurisdiction would lie with the courts of more than one Contracting Party, jurisdiction shall lie –

(a) if the nuclear incident occurred partly outside the territory of any Contracting Party, and partly within the territory of a single Contracting Party, with the courts of the latter; and

(b) in any other case, with the courts of that Contracting Party which is determined by agreement between the Contracting Parties whose courts would be competent under paragraph 1 or 2 of this Article.

Article XII

1. A final judgment entered by a court having jurisdiction under Article XI shall be recognized within the territory of any other Contracting Party, except –

(a) where the judgment was obtained by fraud;

(b) where the party against whom the judgment was pronounced was not given a fair opportunity to present his case; or

(c) where the judgment is contrary to the public policy of the Contracting Party within the territory of which recognition is sought, or is not in accord with fundamental standards of justice.

2. A final judgment which is recognized shall, upon being presented for enforcement in accordance with the formalities required by the law of the Contracting Party where enforcement is sought, be enforceable as if it were a judgment of a court of that Contracting Party.

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

Article XIII

This Convention and the national law applicable thereunder shall be applied without any discrimination based upon nationality, domicile or residence.

Article XIV

Except in respect of measures of execution, jurisdictional immunities under rules of national or international law shall not be invoked in actions under this Convention before the courts competent pursuant to Article XI.

Article XV

The Contracting Parties shall take appropriate measures to ensure that compensation for nuclear damage, interest and costs awarded by a court in connection therewith, insurance and reinsurance premiums and funds provided by insurance, reinsurance or other financial security, or funds provided by the Installation State, pursuant to this Convention, shall be freely transferable into the currency of the Contracting Party within whose territory the damage is suffered, and of the Contracting Party within whose territory the claimant is habitually resident, and, as regards insurance or reinsurance premiums and payments, into the currencies specified in the insurance or reinsurance contract.

Article XVI

No person shall be entitled to recover compensation under this Convention to the extent that he has recovered compensation in respect of the same nuclear damage under another international convention on civil liability in the field of nuclear energy.

Article XVII

This Convention shall not, as between the parties to them, affect the application of any international agreements or international conventions on civil liability in the field of nuclear energy in force, or open for signature, ratification or accession at the date on which this Convention is opened for signature.

Article XVIII

This Convention shall not be construed as affecting the rights, if any, of a Contracting Party under the general rules of public international law in respect of nuclear damage.

Article XIX

1. Any Contracting Party entering into an agreement pursuant to subparagraph (b) of paragraph 3 of Article XI shall furnish without delay to the Director General of the International Atomic Energy Agency for information and dissemination to the other Contracting Parties a copy of such agreement.

2. The Contracting Parties shall furnish to the Director General for information and dissemination to the other Contracting Parties copies of their respective laws and regulations relating to matters covered by this Convention.

Article XX

Notwithstanding the termination of the application of this Convention to any Contracting Party, either by termination pursuant to Article XXV

or by denunciation pursuant to Article XXVI, the provisions of this Convention shall continue to apply to any nuclear damage caused by a nuclear incident occurring before such termination.

Article XXI

This Convention shall be open for signature by the States represented at the International Conference on Civil Liability for Nuclear Damage held in Vienna from 29 April to 19 May 1963.

Article XXII

This Convention shall be ratified, and the instruments of ratification shall be deposited with the Director General of the International Atomic Energy Agency.

Article XXIII

This Convention shall come into force three months after the deposit of the fifth instrument of ratification, and, in respect of each State ratifying it thereafter, three months after the deposit of the instrument of ratification by that State.

Article XXIV

1. All States Members of the United Nations, or of any of the specialized agencies or of the International Atomic Energy Agency not represented at the International Conference on Civil Liability for Nuclear Damage, held in Vienna from 29 April to 19 May 1963, may accede to this Convention.

2. The instruments of accession shall be deposited with the Director General of the International Atomic Energy Agency.

3. This Convention shall come into force in respect of the acceding State three months after the date of deposit of the instrument of accession of that State but not before the date of the entry into force of this Convention pursuant to Article XXIII.

Article XXV

1. This Convention shall remain in force for a period of ten years from the date of its entry into force. Any Contracting Party may, by giving before the end of that period at least twelve months' notice to that effect to the Director General of the International Atomic Energy Agency, terminate the application of this Convention to itself at the end of that period of ten years.

2. This Convention shall, after that period of ten years, remain in force for a further period of five years for such Contracting Parties as have not terminated its application pursuant to paragraph 1 of this Article, and thereafter for successive periods of five years each for those Contracting Parties

which have not terminated its application at the end of one of such periods, by giving, before the end of one of such periods, at least twelve months' notice to that effect to the Director General of the International Atomic Energy Agency.

Article XXVI

1. A conference shall be convened by the Director General of the International Atomic Energy Agency at any time after the expiry of a period of five years from the date of the entry into force of this Convention in order to consider the revision thereof, if one-third of the Contracting Parties express a desire to that effect.

2. Any Contracting Party may denounce this Convention by notification to the Director General of the International Atomic Energy Agency within a period of twelve months following the first revision conference held pursuant to paragraph 1 of this Article.

3. Denunciation shall take effect one year after the date on which notification to that effect has been received by the Director General of the International Atomic Energy Agency.

Article XXVII

The Director General of the International Atomic Energy Agency shall notify the States invited to the International Conference on Civil Liability for Nuclear Damage held in Vienna from 29 April to 19 May 1963 and the States which have acceded to this Convention of the following –

(a) signatures and instruments of ratification and accession received pursuant to Articles XXI, XXII and XXIV;

(b) the date on which this Convention will come into force pursuant to Article XXIII;

(c) notifications of termination and denunciation received pursuant to Articles XXV and XXVI;

(d) requests for the convening of a revision conference pursuant to Article XXVI.

Article XXVIII

This Convention shall be registered by the Director General of the International Atomic Energy Agency in accordance with Article 102 of the Charter of the United Nations.

Article XXIX

The original of this Convention, of which the English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Director General of the International Atomic Energy Agency, who shall issue certified copies.

CONVENTION DE VIENNE RELATIVE A LA RESPONSABILITE CIVILE EN MATIERE DE DOMMAGES NUCLEAIRES
Vienne, 21 mai 1963

LES PARTIES CONTRACTANTES,

AYANT RECONNU qu'il est souhaitable d'établir des normes minima pour assurer la protection financière contre les dommages résultant de certaines utilisations de l'énergie atomique à des fins pacifiques,

CONVAINCUES qu'une convention relative à la responsabilité civile en matière de dommages nucléaires contribuera également au développement de relations amicales entre les nations, quels que soient leurs régimes constitutionnels et sociaux,

ONT DECIDE de conclure une convention à cet effet et, en conséquence, sont convenues de ce qui suit:

Article premier

1. Au sens de la présente Convention,

a) « Personne» signifie toute personne physique, toute personne morale de droit public ou de droit privé, toute organisation internationale ayant la personnalité juridique en vertu du droit de l'Etat où se trouve l'installation, tout Etat et ses subdivisions politiques, ainsi que toute entité publique ou privée n'ayant pas la personnalité juridique.

b) « Ressortissant d'une Partie contractante» comprend une Partie contractante ou toute subdivision politique d'une telle Partie ou toute personne morale de droit public ou de droit privé, ainsi que toute entité publique ou privée n'ayant pas la personnalité juridique, établie sur le territoire d'une Partie contractante.

c) «Exploitant», en ce qui concerne une installation nucléaire, signifie la personne désignée ou reconnue par l'Etat où se trouve l'installation comme l'exploitant de cette installation.

d) «Etat où se trouve l'installation», en ce qui concerne une installation nucléaire, signifie la Partie contractante sur le territoire de laquelle l'installation est située ou, si elle n'est située sur le territoire d'aucun Etat, la Partie contractante qui l'exploite ou autorise son exploitation.

e) «Droit du tribunal compétent» signifie le droit du tribunal qui a la compétence juridictionnelle en vertu de la présente Convention, y compris les règles relatives aux conflits de lois.

f) «Combustible nucléaire» signifie toute matière permettant de produire de l'énergie par une réaction en chaîne de fission nucléaire.

g) «Produit ou déchet radioactif» signifie toute matière radioactive obtenue au cours du processus de production ou d'utilisation d'un combustible nucléaire, ou toute matière rendue radioactive par exposition aux rayonnements émis du fait de ce processus, à l'exclusion des radioisotopes parvenus au dernier stade de fabrication et susceptibles d'être utilisés à des fins scientifiques, médicales, agricoles, commerciales ou industrielles.

h) «Matière nucléaire» signifie:

i) tout combustible nucléaire, autre que l'uranium naturel ou appauvri, permettant de produire de l'énergie par une réaction en chaîne de fission nucléaire hors d'un réacteur nucléaire, que ce soit par lui-même ou en combinaison avec d'autres matières;

ii) tout produit ou déchet radioactif.

i) «Réacteur nucléaire» signifie toute structure contenant du combustible nucléaire disposé de telle sorte qu'une réaction en chaîne de fission nucléaire puisse s'y produire sans l'apport d'une source de neutrons.

j) «Installation nucléaire» signifie:

i) tout réacteur nucléaire, à l'exclusion de ceux qui sont utilisés par un moyen de transport maritime ou aérien comme source d'énergie, que ce soit pour la propulsion ou à toute autre fin;

ii) toute usine utilisant du combustible nucléaire pour la production de matières nucléaires et toute usine de traitement de matières nucléaires, y compris les usines de traitement de combustible nucléaire irradié;

iii) tout stockage de matières nucléaires, à l'exclusion des stockages en cours de transport.

Il est entendu que l'Etat où se trouve l'installation peut considérer comme une seule installation nucléaire plusieurs installations nucléaires se trouvant sur le même site et dont un même exploitant est responsable.

k) «Dommage nucléaire» signifie:

i) tout décès, tout dommage aux personnes, toute perte de biens ou tout dommage aux biens, qui provient ou résulte des propriétés radioactives ou d'une combinaison de ces propriétés et des propriétés toxiques, explosives ou autres propriétés dangereuses d'un combustible nucléaire, de produits ou déchets radioactifs se trouvant dans une installation nucléaire ou de matières nucléaires qui proviennent d'une installation nucléaire, en émanent ou y sont envoyées;

ii) tout autre perte ou dommage ainsi provoqué, dans le cas et dans la mesure où le droit du tribunal compétent le prévoit;

iii) si le droit de l'Etat où se trouve l'installation en dispose ainsi, tout décès, tout dommage aux personnes, toute perte de biens ou tout dommage aux biens, qui provient ou résulte de tout rayonnement ionisant émis par toute autre source de rayonnement se trouvant dans une installation nucléaire;

l) «Accident nucléaire» signifie tout fait ou toute succession de faits de même origine qui cause un dommage nucléaire.

2. L'Etat où se trouve l'installation peut, lorsque les risques encourus sont suffisamment limités, soustraire de petites quantités de matières nucléaires à l'application de la présente Convention, sous réserve que:

a) les limites maxima pour l'exclusion de ces quantités aient été établies par le Conseil des gouverneurs de l'Agence internationale de l'énergie atomique ;

b) toute exclusion par l'Etat où se trouve l'installation respecte ces limites.

Le Conseil des gouverneurs procédera périodiquement à une revision de ces limites.

Article II

1. L'exploitant d'une installation nucléaire est responsable de tout dommage nucléaire dont il est prouvé qu'il a été causé par un accident nucléaire —

a) survenu dans cette installation nucléaire;

b) mettant en jeu une matière nucléaire qui provient ou émane de cette installation et survenu:

i) avant que la responsabilité des accidents nucléaires causés par cette matière n'ait été assumée, aux termes d'un contrat écrit, par l'exploitant d'une autre installation nucléaire;

ii) à défaut de dispositions expresses d'un tel contrat, avant que l'exploitant d'une autre installation nucléaire n'ait pris en charge cette matière;

iii) si cette matière est destinée à un réacteur nucléaire utilisé par un moyen de transport comme source d'énergie, que ce soit pour la propulsion ou à toute autre fin, avant que la personne dûment autorisée à exploiter ce réacteur n'ait pris en charge la matière nucléaire;

iv) si cette matière a été envoyée à une personne se trouvant sur le territoire d'un Etat non contractant, avant qu'elle n'ait été dé-

chargée du moyen de transport par lequel elle est parvenue sur le territoire de cet Etat non contractant;

c) mettant en jeu une matière nucléaire qui est envoyée à cette installation et survenu:

i) après que la responsabilité des accidents nucléaires causés par cette matière lui aura été transférée, aux termes d'un contrat écrit, par l'exploitant d'une autre installation nucléaire;

ii) à défaut de dispositions expresses d'un contrat écrit, après qu'il aura pris en charge cette matière;

iii) après qu'il aura pris en charge cette matière provenant de la personne exploitant un réacteur nucléaire utilisé par un moyen de transport comme source d'énergie, que ce soit pour la propulsion ou à toute autre fin;

iv) si cette matière a été envoyée, avec le consentement par écrit de l'exploitant, par une personne se trouvant sur le territoire d'un Etat non contractant, seulement après qu'elle aura été chargée sur le moyen de transport par lequel elle doit quitter le territoire de cet Etat non contractant.

Il est entendu que si un dommage nucléaire est causé par un accident nucléaire survenu dans une installation nucléaire et mettant en cause des matières nucléaires qui y sont stockées en cours de transport, les dispositions de l'alinéa a) du présent paragraphe ne s'appliquent pas si un autre exploitant ou une autre personne est seul responsable en vertu des dispositions des alinéas b) ou c) du présent paragraphe.

2. L'Etat où se trouve l'installation peut disposer dans sa législation que, dans les conditions qui pourront y être spécifiées, un transporteur de matières nucléaires ou une personne manipulant des déchets radioactifs peut, à sa demande et avec le consentement de l'exploitant intéressé, être désigné ou reconnu comme l'exploitant, à la place de celui-ci, en ce qui concerne respectivement les matières nucléaires ou les déchets radioactifs. En pareil cas, ce transporteur ou cette personne sera considéré, aux fins de la présente Convention, comme l'exploitant d'une installation nucléaire dans le territoire de cet Etat.

3. a) Lorsqu'un dommage nucléaire engage la responsabilité de plusieurs exploitants, ils en sont solidairement et cumulativement responsables, dans la mesure où il est impossible de déterminer avec certitude quelle est la part du dommage attribuable à chacun d'eux.

b) Lorsqu'un accident nucléaire survient en cours de transport de matières nucléaires, soit dans un seul et même moyen de transport, soit, en cas de stockage en cours de transport, dans une seule et même installation nucléaire, et cause un dommage nucléaire qui engage la responsabilité de

plusieurs exploitants, la responsabilité totale ne peut être supérieure au montant le plus élevé applicable à l'égard de l'un quelconque d'entre eux conformément à l'article V.

c) Dans aucun des cas mentionnés aux alinéas a) et b) ci-dessus, la responsabilité d'un exploitant ne peut être supérieure au montant applicable à son égard conformément à l'article V.

4. Sous réserve des dispositions du paragraphe 3 ci-dessus, lorsque plusieurs installations nucléaires relevant d'un seul et même exploitant sont en cause dans un accident nucléaire, cet exploitant est responsable pour chaque installation nucléaire en cause à concurrence du montant applicable à son égard conformément à l'article V.

5. Sauf disposition contraire de la présente Convention, aucune personne autre que l'exploitant n'est responsable d'un dommage nucléaire. Toutefois, la présente disposition est sans effet sur l'application de toute convention internationale de transport qui était en vigueur ou ouverte à la signature, à la ratification ou à l'adhésion lorsque la présente Convention a été ouverte à la signature.

6. Aucune personne n'est responsable d'une perte ou d'un dommage qui n'est pas un dommage nucléaire conformément à l'alinéa k) du paragraphe 1 de l'article premier, mais qui aurait pu être inclus comme tel conformément à l'alinéa k) ii) de ce même paragraphe.

7. Une action directe peut être intentée contre la personne qui fournit une garantie financière conformément à l'article VII, si le droit du tribunal compétent le prévoit.

Article III

L'exploitant responsable en vertu de la présente Convention doit donner au transporteur un certificat délivré par l'assureur ou par la personne qui fournit la garantie financière requise conformément à l'article VII, ou en son nom. Le certificat indique le nom et l'adresse de l'exploitant, ainsi que le montant, la nature et la durée de validité de la garantie; la personne par laquelle ou au nom de laquelle le certificat a été délivré ne peut contester ces indications. Le certificat précise en outre quelle est la matière nucléaire à laquelle la garantie s'applique et il contient une déclaration de l'autorité compétente de l'Etat où se trouve l'installation, attestant que la personne indiquée est un exploitant au sens de la présente Convention.

Article IV

1. L'exploitant est objectivement responsable de tout dommage nucléaire en vertu de la présente Convention.

2. Si l'exploitant prouve que le dommage nucléaire résulte, en totalité ou en partie, d'une négligence grave de la personne qui l'a subi ou que cette personne a agi ou omis d'agir dans l'intention de causer un dommage, le tribunal compétent peut, si son droit en dispose ainsi, dégager l'exploitant, en totalité ou en partie, de l'obligation de réparer le dommage subi par cette personne.

3. a) Aucune responsabilité n'incombe à un exploitant, en vertu de la présente Convention, pour un dommage nucléaire causé par un accident nucléaire résultant directement d'actes de conflit armé, d'hostilités, de guerre civile ou d'insurrection.

b) Sauf dans la mesure où le droit de l'Etat où se trouve l'installation en dispose autrement, l'exploitant n'est pas tenu responsable du dommage nucléaire causé par un accident nucléaire résultant directement d'un cataclysme naturel de caractère exceptionnel.

4. Lorsqu'un dommage nucléaire et un dommage non nucléaire sont causés par un accident nucléaire ou conjointement par un accident nucléaire et un ou plusieurs autres événements, cet autre dommage, dans la mesure où on ne peut le séparer avec certitude du dommage nucléaire, est considéré, aux fins de la présente Convention, comme un dommage nucléaire causé par l'accident nucléaire. Toutefois, lorsqu'un dommage est causé conjointement par un accident nucléaire visé par la présente Convention et par une émission de rayonnements ionisants non visée par elle, aucune disposition de la présente Convention ne limite ni n'affecte autrement la responsabilité, envers les personnes qui subissent un dommage nucléaire ou par voie de recours ou de contribution, de toute personne qui pourrait être tenue responsable du fait de cette émission de rayonnements ionisants.

5. L'exploitant n'est pas responsable, en vertu de la présente Convention, du dommage nucléaire causé:

a) à l'installation nucléaire elle-même ou aux biens qui se trouvent sur le site de cette installation et qui sont ou doivent être utilisés en rapport avec elle;

b) au moyen de transport sur lequel la matière nucléaire en cause se trouvait au moment de l'accident nucléaire.

6. Tout Etat où se trouve l'installation peut prévoir dans sa législation que l'alinéa b) du paragraphe 5 ci-dessus n'est pas applicable, sous réserve qu'en aucun cas la responsabilité de l'exploitant pour un dommage nucléaire autre que le dommage nucléaire au moyen de transport ne devienne inférieure à 5 millions de dollars des Etats-Unis par accident nucléaire.

7. Aucune disposition de la présente Convention n'affecte:

a) la responsabilité de toute personne physique qui a causé, par un acte ou une omission procédant de l'intention de causer un dommage, un dommage nucléaire dont l'exploitant, conformément au paragraphe 3 ou au

paragraphe 5 ci-dessus, n'est pas responsable en vertu de la présente Convention;

b) la responsabilité de l'exploitant, en dehors de la présente Convention, pour un dommage nucléaire dont, conformément à l'alinéa b) du paragraphe 5 ci-dessus, l'exploitant n'est pas responsable en vertu de la présente Convention.

Article V

1. L'Etat où se trouve l'installation peut limiter la responsabilité de l'exploitant à un montant qui ne sera pas inférieur à 5 millions de dollars par accident nucléaire.

2. Tout montant de la responsabilité fixé conformément au présent article ne comprend pas les intérêts ou dépens alloués par un tribunal au titre d'une action en réparation d'un dommage nucléaire.

3. Le dollar des Etats-Unis mentionné dans la présente Convention est une unité de compte qui équivaut à la valeur-or du dollar des Etats-Unis à la date du 29 avril 1963, c'est-à-dire 35 dollars pour une once troy d'or fin.

4. Le chiffre indiqué au paragraphe 6 de l'article IV et au paragraphe 1 ci-dessus peut être converti en monnaie nationale en chiffres ronds.

Article VI

1. Le droit à réparation en vertu de la présente Convention est éteint si une action n'est pas intentée dans les dix ans à compter de la date de l'accident nucléaire. Toutefois, si, conformément au droit de l'Etat où se trouve l'installation, la responsabilité de l'exploitant est couverte par une assurance ou toute autre garantie financière ou grâce à des fonds publics pendant une période supérieure à dix ans, le droit du tribunal compétent peut prévoir que le droit à réparation contre l'exploitant n'est éteint qu'à l'expiration de la période pendant laquelle la responsabilité de l'exploitant est ainsi couverte conformément au droit de l'Etat où se trouve l'installation. Cette prolongation du délai d'extinction ne porte atteinte en aucun cas au droit à réparation en vertu de la présente Convention des personnes ayant intenté contre l'exploitant, avant l'expiration dudit délai de dix ans, une action du fait de décès ou de dommages aux personnes.

2. Lorsqu'un dommage nucléaire est causé par un accident nucléaire mettant en jeu une matière nucléaire qui, au moment de l'accident nucléaire, avait été volée, perdue, jetée par-dessus bord ou abandonnée, le délai visé au paragraphe 1 ci-dessus est calculé à partir de la date de cet accident nucléaire, mais il ne peut en aucun cas être supérieur à vingt ans à compter de la date du vol, de la perte, du jet par-dessus bord ou de l'abandon.

3. Le droit du tribunal compétent peut fixer un délai d'extinction ou de prescription qui ne sera pas inférieur à trois ans à compter de la date à

laquelle la victime du dommage nucléaire a eu ou aurait dû avoir connaissance de ce dommage et de l'identité de l'exploitant qui en est responsable, sans que les délais indiqués aux paragraphes 1 et 2 ci-dessus puissent être dépassés.

4. A moins que le droit du tribunal compétent n'en dispose autrement, toute personne qui affirme avoir subi un dommage nucléaire et qui a intenté une action en réparation dans le délai applicable en vertu du présent article peut modifier sa demande pour tenir compte de toute aggravation du dommage, même après l'expiration de ce délai, tant qu'un jugement définitif n'a pas été prononcé.

5. Si la compétence juridictionnelle doit être attribuée conformément à l'alinéa b) du paragraphe 3 de l'article XI et qu'une demande à cet effet ait été présentée à l'une des Parties contractantes habilitées à ce faire, dans le délai applicable en vertu du présent article, toute action peut être intentée dans les six mois qui suivent l'attribution de compétence, au cas où celle-ci interviendrait moins de six mois avant l'expiration de ce délai.

Article VII

1. L'exploitant est tenu de maintenir une assurance ou toute autre garantie financière couvrant sa responsabilité pour dommage nucléaire; le montant, la nature et les conditions de l'assurance ou de la garantie sont déterminés par l'Etat où se trouve l'installation. L'Etat où se trouve l'installation assure le paiement des indemnités pour dommage nucléaire reconnues comme étant à la charge de l'exploitant, en fournissant les sommes nécessaires dans la mesure où l'assurance ou la garantie financière ne serait pas suffisante, sans que ce paiement puisse toutefois dépasser la limite éventuellement fixée en vertu de l'article V.

2. Rien dans le paragraphe 1 ci-dessus n'oblige une Partie contractante ni aucune de ses subdivisions politiques, telles qu'Etats ou Républiques, à maintenir une assurance ou toute autre garantie financière couvrant sa responsabilité comme exploitant.

3. Les fonds provenant d'une assurance ou de toute autre garantie financière ou fournis par l'Etat où se trouve l'installation, conformément au paragraphe 1 ci-dessus, sont exclusivement réservés à la réparation due en application de la présente Convention.

4. L'assureur ou tout autre garant financier ne peut suspendre l'assurance ou la garantie financière prévue au paragraphe 1 ci-dessus ou y mettre fin sans un préavis de deux mois au moins donné par écrit à l'autorité publique compétente, ni, dans la mesure où ladite assurance ou autre garantie financière concerne un transport de matière nucléaire, pendant la durée de ce transport.

Article VIII

Sous réserve des dispositions de la présente Convention, la nature, la forme et l'étendue de la réparation, ainsi que la répartition équitable des indemnités, sont régies par le droit du tribunal compétent.

Article IX

1. Si les dispositions d'un régime d'assurance maladie, d'assurance sociale, de sécurité sociale, d'assurance des accidents du travail ou des maladies professionnelles comportent l'indemnisation des dommages nucléaires, les droits à réparation, en vertu de la présente Convention, des bénéficiaires de ce régime, ainsi que les droits de recours contre l'exploitant responsable prévus par ce régime, sont déterminés, sous réserve des dispositions de la présente Convention, par le droit de la Partie contractante ou les règlements de l'organisation intergouvernementale qui ont établi de tels régimes.

2. a) Si un ressortissant d'une Partie contractante, autre que l'exploitant, a réparé un dommage nucléaire en vertu d'une convention internationale ou du droit d'un Etat non contractant, il acquiert par subrogation, à concurrence de la somme versée, les droits dont la personne ainsi indemnisée aurait bénéficié en vertu de la présente Convention. Aucune personne ne pourra acquérir un droit quelconque de cette manière dans le cas et dans la mesure où l'exploitant a contre elle un droit de recours en vertu de la présente Convention.

b) Aucune disposition de la présente Convention ne saurait empêcher un exploitant qui a payé une indemnité pour un dommage nucléaire au moyen de fonds autres que ceux qui ont été fournis conformément au paragraphe 1 de l'article VII de recouvrer sur la personne fournissant une garantie financière en application dudit paragraphe ou sur l'Etat où se trouve l'installation, à concurrence de la somme qu'il a versée, le montant que la personne ainsi indemnisée aurait obtenu en vertu de la présente Convention.

Article X

L'exploitant n'a un droit de recours que:

a) si un tel droit a été expressément prévu par un contrat écrit;

b) ou, si l'accident nucléaire résulte d'un acte ou d'une omission procédant de l'intention de causer un dommage, contre la personne physique qui a agi ou omis d'agir dans cette intention.

Article XI

1. Sauf dans les cas où le présent article en dispose autrement, les tribunaux de la Partie contractante sur le territoire de laquelle l'accident nucléaire s'est produit sont seuls compétents pour connaître des actions intentées conformément à l'article II.

2. Lorsque l'accident nucléaire est survenu en dehors du territoire de toute Partie contractante, ou si le lieu de l'accident n'a pu être déterminé avec certitude, les tribunaux de l'Etat où se trouve l'installation dont relève l'exploitant responsable sont compétents pour connaître de ces actions.

3. Lorsque les tribunaux de plus d'une Partie contractante peuvent être compétents conformément aux paragraphes 1 ou 2 ci-dessus, la compétence est attribuée:

a) si l'accident nucléaire est survenu en partie en dehors du territoire de toute Partie contractante et en partie sur le territoire d'une seule Partie contractante, aux tribunaux de cette dernière;

b) dans tous les autres cas, aux tribunaux de la Partie contractante qui est désignée par accord entre les Parties contractantes dont les tribunaux auraient été compétents en vertu du paragraphe 1 ou du paragraphe 2 ci-dessus.

Article XII

1. Tout jugement définitif prononcé par un tribunal ayant la compétence juridictionnelle en vertu de l'article XI doit être reconnu sur le territoire de toute autre Partie contractante, à moins que:

a) le jugement n'ait été obtenu par dol;

b) la personne contre laquelle le jugement a été prononcé n'ait pas eu la possibilité de présenter sa cause dans des conditions équitables;

c) le jugement ne soit contraire à l'ordre public de la Partie contractante ou il doit être reconnu ou ne soit pas conforme aux normes fondamentales de la justice.

2. Tout jugement définitif qui est reconnu et dont l'exécution est demandée dans la forme requise par le droit de la Partie contractante où cette exécution est recherchée, est exécutoire comme s'il s'agissait d'un jugement d'un tribunal de cette Partie contractante.

3. Toute affaire sur laquelle un jugement a été rendu ne peut faire l'objet d'un nouvel examen au fond.

Article XIII

La présente Convention et le droit national applicable en vertu de ses dispositions sont appliqués sans aucune discrimination fondée sur la nationalité, le domicile ou la résidence.

Article XIV

Si une action est intentée en vertu de la présente Convention devant le tribunal compétent aux termes de l'article XI, aucune immunité de juridiction

découlant des règles du droit national ou du droit international ne peut être invoquée, sauf en ce qui concerne les mesures d'exécution.

Article XV

Toute Partie contractante prend les mesures voulues pour assurer que la réparation d'un dommage nucléaire ainsi que les intérêts et dépens alloués par un tribunal à ce titre, les primes d'assurance et de réassurance ainsi que les fonds provenant d'une assurance, d'une réassurance ou d'une autre garantie financière ou les fonds fournis par l'Etat où se trouve l'installation, conformément à la présente Convention, sont librement convertibles dans la monnaie de la Partie contractante sur le territoire de laquelle le dommage a été subi, de la Partie contractante sur le territoire de laquelle le demandeur a sa résidence habituelle et, en ce qui concerne les primes et prestations des assurances et réassurances, dans les monnaies spécifiées par le contrat d'assurance ou de réassurance.

Article XVI

Nul n'aura le droit de recevoir une réparation en vertu de la présente Convention dans la mesure où il a déjà obtenu réparation du même dommage nucléaire en vertu d'une autre convention internationale sur la responsabilité civile dans le domaine de l'énergie nucléaire.

Article XVII

La présente Convention ne porte pas atteinte à l'application des conventions ou accords internationaux relatifs à la responsabilité civile en matière de dommages nucléaires qui sont en vigueur ou ouverts à la signature, à la ratification ou à l'adhésion à la date à laquelle la présente Convention est ouverte à la signature, en ce qui concerne les Parties à ces accords ou conventions.

Article XVIII

La présente Convention ne saurait être interprétée comme affectant les droits que pourrait avoir une Partie contractante en vertu des règles générales de droit international public en ce qui concerne un dommage nucléaire.

Article XIX

1. Toute Partie contractante qui conclut un accord en vertu de l'alinéa b) du paragraphe 3 de l'article XI communique sans délai le texte dudit accord au Directeur général de l'Agence internationale de l'énergie atomique, pour information et pour communication aux autres Parties contractantes.

2. Toute Partie contractante communique au Directeur général, pour information et pour communication aux autres Parties contractantes, le texte

de ses lois et règlements relatifs aux questions traitées par la présente Convention.

Article XX

Nonobstant le fait qu'une Partie contractante aura mis fin à l'application de la présente Convention en ce qui la concerne, conformément à l'article XXV, ou l'aura dénoncée, conformément à l'article XXVI, les dispositions de la présente Convention restent applicables pour tout dommage nucléaire causé par un accident nucléaire survenu avant la date à laquelle la présente Convention a cessé de s'appliquer à l'égard de cette Partie contractante.

Article XXI

La présente Convention sera ouverte à la signature des Etats représentés à la Conférence internationale sur la responsabilité civile en matière de dommages nucléaires, tenue à Vienne du 29 avril au 19 mai 1963.

Article XXII

La présente Convention sera ratifiée et les instruments de ratification seront déposés auprès du Directeur général de l'Agence internationale de l'énergie atomique.

Article XXIII

La présente Convention entrera en vigueur trois mois après le dépôt du cinquième instrument de ratification et, pour tout Etat qui la ratifiera par la suite, trois mois après le dépôt de l'instrument de ratification de cet Etat.

Article XXIV

1. Tout Etat membre de l'Organisation des Nations Unies, d'une institution spécialisée ou de l'Agence internationale de l'énergie atomique non représenté à la Conférence internationale sur la responsabilité civile en matière de dommages nucléaires, tenue à Vienne du 29 avril au 19 mai 1963, pourra adhérer à la présente Convention.

2. Les instruments d'adhésion seront déposés auprès du Directeur général de l'Agence internationale de l'énergie atomique.

3. Pour tout Etat adhérant, la Convention entrera en vigueur trois mois après la date du dépôt de son instrument d'adhésion, à condition qu'elle soit entrée en vigueur conformément à l'article XXIII.

Article XXV

1. La présente Convention est conclue pour une période de dix ans à compter de la date de son entrée en vigueur. Toute Partie contractante pourra

mettre fin, en ce qui la concerne, à l'application de la présente Convention au terme de cette période en donnant un préavis de un an à cet effet au Directeur général de l'Agence internationale de l'énergie atomique.

2. La présente Convention restera par la suite en vigueur pour une période de cinq ans à l'égard des Parties contractantes qui n'auront pas mis fin à son application conformément au paragraphe 1 ci-dessus et, ultérieurement, par périodes successives de cinq ans à l'égard des Parties contractantes qui n'y auront pas mis fin au terme de l'une de ces périodes en donnant un préavis de un an à cet effet au Directeur général de l'Agence internationale de l'énergie atomique.

Article XXVI

1. Une conférence sera convoquée par le Directeur général de l'Agence internationale de l'énergie atomique, à tout moment au terme de la période de cinq ans qui suivra la date de son entrée en vigueur, pour examiner la revision de la présente Convention, si un tiers des Parties contractantes en exprime le désir.

2. Toute Partie contractante peut dénoncer la présente Convention, par notification au Directeur général de l'Agence internationale de l'énergie atomique, dans un délai de douze mois après la première conférence de revision tenue conformément au paragraphe 1 ci-dessus.

3. Toute dénonciation prendra effet un an après la date de réception de la notification à cet effet par le Directeur général de l'Agence internationale de l'énergie atomique.

Article XXVII

Le Directeur général de l'Agence internationale de l'énergie atomique notifiera aux Etats invités à la Conférence internationale sur la responsabilité civile en matière de dommages nucléaires, tenue à Vienne du 29 avril au 19 mai 1963, et aux Etats ayant adhéré à la Convention:

a) les signatures ainsi que la réception des instruments de ratification ou d'adhésion, en application des articles XXI, XXII et XXIV;

b) la date à laquelle la Convention entrera en vigueur en application de l'article XXIII;

c) la réception des notifications de retrait et de dénonciation, en application des articles XXV et XXVI;

d) les demandes de convocation d'une conférence de revision de la Convention en application de l'article XXVI.

Article XXVIII

La presente Convention sera enregistrée par le Directeur général de l'Agence internationale de l'énergie atomique, conformément à l'Article 102 de la Charte des Nations Unies.

Article XXIX

Le texte original de la présente Convention, dont les versions anglaise, espagnole, française et russe font également foi, sera déposé auprès du Directeur général de l'Agence internationale de l'énergie atomique, qui en délivrera des copies certifiées conformes.

ВЕНСКАЯ КОНВЕНЦИЯ О ГРАЖДАНСКОЙ ОТВЕТСТВЕННОСТИ ЗА ЯДЕРНЫЙ УЩЕРБ
Вена, 21 Мая 1963 года

ДОГОВАРИВАЮЩИЕСЯ СТОРОНЫ,

ПРИЗНАВ желательность установления некоторых минимальных норм для обеспечения финансовой защиты от ущерба, возникающего в результате определенных видов мирного использования ядерной энергии,

СЧИТАЯ, что конвенция о гражданской ответственности за ядерный ущерб будет содействовать также развитию дружеских отношений между нациями, независимо от их различных конституционных и социальных систем,

РЕШИЛИ с этой целью заключить конвенцию и в связи с этим согласились о нижеследующем:

Статья I

1. Для целей настоящей Конвенции:

a) "Лицо" означает любое физическое лицо, товарищество, любой частный или государственный орган, независимо от того, является ли он юридическим лицом или нет, любую международную организацию, являющуюся юридическим лицом согласно законодательству отвечающего за ядерную установку государства, и любое государство или любое из входящих в него государственных образований.

b) "Гражданин Договаривающейся стороны" включает Договаривающуюся сторону или любое входящее в нее государственное образование, товарищество, или любой частный или государственный орган, учрежденный в пределах территории Договаривающейся стороны, независимо от того, является ли он юридическим лицом или нет.

c) "Оператор" в отношении ядерной установки означает лицо, назначенное или признанное отвечающим за установку государством в качестве оператора этой установки.

d) "Отвечающее за установку государство" в отношении ядерной установки означает Договаривающуюся сторону, в пределах территории которой находится эта установка, или, если она не находится в пределах территории любого государства, Договаривающуюся сторону, которая эксплуатирует или по разрешению которой эксплуатируется эта ядерная установка.

e) "Закон компетентного суда" означает закон суда, имеющего юрисдикцию согласно настоящей Конвенции, включая любые положения такого закона, касающиеся коллизии законов.

f) "Ядерное топливо" означает любой материал, способный производить энергию путем самоподдерживающегося цепного процесса ядерного деления.

g) "Радиоактивные продукты или отходы" означают любой радиоактивный материал, произведенный в процессе производства или использования ядерного топлива, или любой материал, ставший радиоактивным под действием облучения в результате производства или использования ядерного топлива, но не включают радиоизотопы, которые достигли окончательной стадии изготовления, став таким образом пригодными для использования в любых научных, медицинских, сельскохозяйственных, коммерческих или промышленных целях.

h) "Ядерный материал" означает:

i) ядерное топливо, за исключением природного урана и обедненного урана, способное производить энергию путем самоподдерживающегося цепного процесса ядерного деления вне ядерного реактора самостоятельно или в комбинации с каким-либо другим материалом; и

ii) радиоактивные продукты или отходы.

i) "Ядерный реактор" означает любое сооружение, содержащее ядерное топливо, расположенное таким образом, что в нем может произойти самоподдерживающийся цепной процесс ядерного деления без дополнительного источника нейтронов.

j) "Ядерная установка" означает:

i) любой ядерный реактор, за исключением реактора, которым оборудовано средство морского или воздушного транспорта в целях использования его в качестве источника энергии для приведения в движение этого средства транспорта или для любой другой цели;

ii) любой завод, использующий ядерное топливо для производства ядерного материала, или любой завод по обработке ядерного материала, включая любой завод по переработке облученного ядерного топлива; и

iii) любое место, где хранится (складирован) ядерный материал, за исключением складирования, связанного с перевозкой такого материала, при условии, что отвечающее за установку государство может установить, что несколько ядерных установок одного оператора, которые расположены в одном и том же месте, рассматриваются как единая ядерная установка.

k) "Ядерный ущерб" означает:

i) смерть, любое телесное повреждение или любую потерю имущества, или любой ущерб имуществу, которые возникают или являются результатом радиоактивных свойств или комбинации радиоактивных свойств с токсическими, взрывными или другими опасными свойствами ядерного топлива, или радиоактивных продуктов или отходов на ядерной установке, или ядерного материала, поступающего с ядерной установки, произведенного в ней или направленного на ядерную установку;

ii) любую другую потерю или ущерб, возникающие таким образом или являющиеся результатом этого, если это предусмотрено законом компетентного суда, и в пределах, установленных таким законом; и

iii) если это предусмотрено законодательством отвечающего за установку государства, смерть, любое телесное повреждение или любую потерю имущества, или любой ущерб имуществу, которые возникают или являются результатом другого ионизирующего излучения, испускаемого любым другим источником излучения внутри ядерной установки.

l) "Ядерный инцидент" означает любое происшествие или серию происшествий одного и того же происхождения, которые причиняют ядерный ущерб.

2. Отвечающее за установку государство может, если это позволяют небольшие размеры риска, с которым это сопряжено, исключать любые небольшие количества ядерного материала из сферы применения настоящей Конвенции при условии, что

a) максимальные пределы для исключения таких количеств установлены Советом управляющих Международного агентства по атомной энергии ; и

b) любое исключение, сделанное отвечающим за установку государством, не превышает таких установленных пределов.

Эти максимальные пределы периодически пересматриваются Советом управляющих.

Статья II

1. Оператор ядерной установки несет ответственность за ядерный ущерб, если доказано, что такой ущерб причинен ядерным инцидентом –

a) на его ядерной установке; или

b) связанным с ядерным материалом, поступившим с такой установки или произведенным в его ядерной установке, и происшедшим:

i) до принятия оператором другой ядерной установки ответственности в отношении ядерных инцидентов, связанных с этим ядерным материалом в соответствии с ясно выраженными условиями письменного контракта;

ii) при отсутствии таких ясно выраженных условий, – до поступления этого ядерного материала в распоряжение оператора другой ядерной установки; или

iii) если этот ядерный материал предназначен для использования в ядерном реакторе, которым оборудовано средство транспорта для использования его в качестве источника энергии для приведения в движение этого транспорта или для любой другой цели, – до поступления этого ядерного материала в распоряжение лица, уполномоченного надлежащим образом эксплуатировать такой реактор; но

iv) если этот ядерный материал был направлен какому-либо лицу в пределах территории государства, не являющегося участником Конвенции, – до выгрузки его транспорта, на котором он был доставлен на территорию этого государства, не являющегося участником настоящей Конвенции;

c) связанным с ядерным материалом, направленным на его ядерную установку, и происшедшим:

i) после принятия им от оператора другой ядерной установки ответственности, в соответствии с ясно выраженными условиями письменного контракта, в отношении ядерных инцидентов, связанных с этим ядерным материалом;

ii) при отсутствии таких ясно выраженных условий, – после поступления этого ядерного материала в его распоряжение; или

iii) после поступления в его распоряжение этого ядерного материала от лица, эксплуатирующего ядерный реактор, которым оборудовано средство транспорта для использования его в качестве источника энергии для приведения в движение этого средства транспорта или для любой другой цели; но

iv) если этот ядерный материал, с письменного согласия этого оператора, был направлен от какого-либо лица в пределах территории государства, не являющегося участником настоящей Конвенции, – только после погрузки его на транспорт, на котором он должен быть вывезен с территории этого государства;

при условии, что, если ядерный ущерб причинен ядерным инцидентом, происшедшим на ядерной установке и связанным с ядерным материалом, складированным на ней в связи с перевозкой такого материала, то положения подпункта a) данного пункта не применяются в том случае, когда ответственность несет только другой оператор или только другое лицо в соответствии с положениями подпункта b) и c) данного пункта.

2. Отвечающее за установку государство может предусмотреть в законодательстве, что в соответствии с условиями, которые могут быть установлены в нем, перевозчик ядерного материала или лицо, имеющее дело с радиоактивными отходами, может по его просьбе и с согласия заинтересованного оператора, быть назначено или признано в качестве оператора вместо этого оператора в отношении такого ядерного материала или радиоактивных отходов соответственно. В этом случае такой перевозчик или лицо рассматривается, для всех целей настоящей Конвенции, как оператор ядерной установки, находящейся в пределах территории этого государства.

3. a) Если ядерный ущерб связан с ответственностью более чем одного оператора, то эти операторы, поскольку доля каждого из них в этом ущербе может быть обоснованно выделена, несут солидарную и долевую ответственность.

b) Если ядерный инцидент происходит во время перевозки ядерного материала на одном и том же средстве транспорта, или, в случае складирования в связи с перевозкой, на одной и той же ядерной установке и причиняет ядерный ущерб, связанный с ответственностью более чем одного оператора, общий размер ответственности не должен превышать наивысшего размера, применимого в отношении любого из них в соответствии со статьей V.

c) Ни в одном из случаев, упомянутых в подпунктах a) и b) этого пункта, ответственность каждого оператора не должна превышать размера, применимого в отношении его в соответствии со статьей V.

4. При условии соблюдения положений пункта 3 этой статьи, если несколько ядерных установок одного и того же оператора вовлечены в один и тот же ядерный инцидент, то такой оператор несет ответственность в отношении каждой из этих ядерных установок вплоть до размера, применимого в отношении его в соответствии со статьей V.

5. За исключением случаев, когда в настоящей Конвенции предусмотрено иное, ни одно лицо, кроме оператора, не несет ответственности за ядерный ущерб. Это, однако, не затрагивает применения любой международной конвенции в области транспорта, которая действует или открыта для подписания, ратификации или присоединения в день , когда Конвенция будет открыта для подписания.

6. Ни одно лицо не несет ответственности за потерю или ущерб, не являющийся ядерным ущербом в соответствии с подпунктом k) пункта 1 статьи I,

но который мог бы быть включен в качестве такого ущерба в соответствии с подпунктом k) ii) указанного пункта.

7. Прямой иск возбуждается в отношении лица, предоставляющего финансовое обеспечение в соответствии со статьей VII, если это предусмотрено законом компетентного суда.

Статья III

Оператор, который несет ответственность согласно настоящей Конвенции, снабжает перевозчика сертификатом, выданным страховщиком или от его имени или другим финансовым гарантом, предоставляющим финансовое обеспечение, требуемое в соответствии со статьей VII. В сертификате указываются фамилия и адрес этого оператора, а также сумма, вид и срок обеспечения, и эти сведения не могут оспариваться лицом, которым или от имени которого выдан сертификат. В сертификате также указывается ядерный материал, в отношении которого применяется обеспечение, и в него включается заявление компетентного государственного органа отвечающего за установку государства о том, что названное лицо является оператором в смысле настоящей Конвенции.

Статья IV

1. Ответственность оператора за ядерный ущерб согласно настоящей Конвенции является абсолютной.

2. Если оператор докажет, что ядерный ущерб возник полностью или частично либо в результате грубой небрежности лица, которому причинен ущерб, либо в результате действия или бездействия такого лица с намерением причинить ущерб, то компетентный суд может, если это предусмотрено его законом освободить оператора полностью или частично от его обязанности возмещать ущерб, причиненный такому лицу.

3. a) Никакая ответственность согласно настоящей Конвенции не возлагается на оператора за ядерный ущерб, причиненный ядерным инцидентом, возникшим непосредственно в результате вооруженного конфликта, военных действий, гражданской войны или восстания.

b) За исключением случаев, когда законодательство отвечающего за установку государства может предусматривать противоположное, этот оператор не несет ответственности за ядерный ущерб, причиненный ядерным инцидентом, возникшим непосредственно в результате тяжелого стихийного бедствия исключительного характера.

4. Когда ядерный и неядерный ущерб причинены ядерным инцидентом или совместно ядерным инцидентом и одним или более происшествиями иного характера, такой неядерный ущерб, в той степени, в какой он не может быть обоснованно отделен от ядерного ущерба, считается для целей настоящей Конвенции ядерным ущербом, причиненным этим ядерным инцидентом. Однако, если ущерб причинен совместно ядерным инцидентом, подпадающим

под действие настоящей Конвенции, и высвобождением ионизирующего излучения, не подпадающим под ее действие, то ничто в настоящей Конвенции не ограничивает и не затрагивает иным образом ответственности, – как в отношении любого лица, которому причинен ядерный ущерб, так и регрессного иска или требования о возмещении, – любого лица, которое может быть признано ответственным в связи с этим высвобождением ионизирующего излучения.

5. Согласно настоящей Конвенции оператор не несет ответственности за ядерный ущерб, причиненный:

a) самой ядерной установке или любому имуществу на месте расположения этой установки, которое используется или должно использоваться в связи с этой установкой; или

b) средству транспорта, на котором этот ядерный материал находился во время ядерного инцидента.

6. Любое отвечающее за установку государство может предусмотреть в законодательном порядке, что подпункт b) пункта 5 данной статьи не применяется при условии, что ответственность данного оператора в отношении ядерного ущерба, иного чем ядерный ущерб, причиненный средству транспорта, ни в коем случае не будет понижена до суммы, меньшей, чем 5 млн. амер. долларов за каждый ядерный инцидент.

7. Ничто в настоящей Конвенции не затрагивает:

a) ответственности любого физического лица за ядерный ущерб, за который оператор в силу пункта 3 или 5 этой статьи не несет ответственности согласно настоящей Конвенции и который это физическое лицо причинило действием или бездействием с намерением причинить ущерб; или

b) ответственности вне сферы действия настоящей Конвенции оператора за ядерный ущерб, за который в силу подпункта b) пункта 5 этой статьи он не несет ответственности по этой Конвенции.

Статья V

1. Ответственность оператора может быть ограничена отвечающим за установку государством не менее, чем 5 млн. амер. долларов за каждый ядерный инцидент.

2. Любые пределы ответственности, которые могут быть установлены в соответствии с этой статьей, не будут включать в себя процент или судебные издержки, установленные судом по искам о возмещении за ядерный ущерб.

3. Доллар Соединенных Штатов, указанный в настоящей Конвенции, является расчетной единицей, эквивалентной стоимости доллара Соединенных

Штатов по его золотому паритету на 29 апреля 1963 года, то есть 35 амер. долларов за одну тройскую унцию чистого золота.

4. Сумма, упомянутая в пункте 6 статьи IV и в пункте 1 данной статьи, может быть конвертирована в национальную валюту в округленных цифрах.

Статья VI

1. Права на возмещение по настоящей Конвенции теряют силу, если иск не возбужден в течение десяти лет со дня ядерного инцидента. Однако, если согласно законодательству отвечающего за установку государства ответственность оператора покрывается страхованием или другими финансовым обеспечением или государственными фондами в течение периода свыше десяти лет, то закон компетентного суда может предусмотреть, что права на получение возмещения от оператора утрачиваются только по истечении периода, который может быть свыше десяти лет, но не будет продолжительнее периода, в течение которого ответственность оператора покрывается таким образом по законодательству отвечающего за установку государства. Такое продление периода утраты права на иск ни в коем случае не затрагивает права на возмещение согласно настоящей Конвенции, принадлежащего любому лицу, которое возбудило иск против оператора за причинение смерти или телесного повреждения до истечения вышеуказанного десятилетнего периода.

2. Если ядерный ущерб причинен ядерным инцидентом, связанным с ядерным материалом, который во время этого ядерного инцидента был похищен, утерян, выброшен или оставлен без присмотра, то период, установленный в соответствии с пунктом 1 этой статьи, исчисляется со дня возникновения этого ядерного инцидента, но этот период ни в коем случае не должен превышать двадцать лет со дня хищения, потери, выброса или оставления без присмотра.

3. Закон компетентного суда может установить срок утраты права на иск или срок исковой давности не менее трех лет, считая со дня, когда лицо, потерпевшее ядерный ущерб, знало или должно было знать о таком ущербе и об операторе, ответственном за этот ущерб, при условии, что период, установленный в соответствии с пунктами 1 и 2 данной статьи, не будет превышен.

4. Если законом компетентного суда не предусмотрено иного, любое лицо, которое утверждает, что оно понесло ядерный ущерб, и которое возбудило иск о возмещении в течение периода, применимого в соответствии с данной статьей, может изменить свои требования с тем, чтобы учесть любое усугубление этого ущерба, даже после истечения такого периода при условии, что окончательное судебное решение еще не вынесено.

5. Если юрисдикция должна определяться в соответствии с подпунктом b) пункта 3 статьи XI и в пределах срока, применимого в соответствии с этой статьей, сделано обращение к одной из Договаривающихся сторон, уполно-

моченной это определять, но период, остающийся со дня такого определения, не превышает шести месяцев, то период на предъявление иска устанавливается в шесть месяцев, исчисляемых с указанного дня.

Статья VII

1. От оператора требуется поддерживать страхование или другое финансовое обеспечение, покрывающее его ответственность за ядерный ущерб, в таком размере, такого вида и на таких условиях, как определяет отвечающее за установку государство. Оно обеспечивает выплату возмещений по исковым требованиям, предъявленным оператору за ядерный ущерб путем предоставления необходимых средств в том размере, в каком размер страхования или другого финансового обеспечения недостаточен для удовлетворения таких требований, но не выше предела (если он имеется), установленного в соответствии со статьей V.

2. Пункт 1 данной статьи не требует от Договаривающейся стороны или любого из входящих в ее состав государственных образований, таких, как штаты или республики, осуществлять страхование или другое финансовое обеспечение для покрытия их ответственности как операторов.

3. Средства, предоставленные страхованием, другим финансовым обеспечением или отвечающим за установку государством в соответствии с пунктом 1 данной статьи, предназначаются исключительно для возмещения, подлежащего выплате согласно настоящей Конвенции.

4. Ни страховщик, ни любое другое лицо, предоставившее финансовое обеспечение, не может приостановить или прекратить страхование или иное финансовое обеспечение, предоставляемое в соответствии с пунктом 1 данной статьи, не уведомив об этом письменно, по крайней мере за два месяца, компетентный государственный орган, или, когда такое страхование или другое финансовое обеспечение касается перевозки ядерного материала, в течение периода указанной перевозки.

Статья VIII

При условии соблюдения положений настоящей Конвенции, характер, форма и размер возмещения так же, как и справедливое распределение возмещения, определяются законом компетентного суда.

Статья IX

1. Если положения государственных или общественных систем страхования здоровья, социального страхования, социального обеспечения, возмещения при несчастных случаях на производстве или возмещения на случай профессиональных заболеваний включают возмещение за ядерный ущерб, то права лиц, пользующихся такими системами, на получение возмещения согласно настоящей Конвенции и права регресса в силу таких систем против несущего ответственность оператора определяются, при условии соблю-

дения положений настоящей Конвенции, законодательством Договаривающейся стороны, в которой такие системы установлены, или правилами межправительственной организации, которая установила такие системы.

2. a) Если лицо, являющееся гражданином Договаривающейся стороны, за исключением оператора, выплатило возмещение за ядерный ущерб в соответствии с международной конвенцией или по законодательству государства, не являющегося участником настоящей Конвенции, то такое лицо приобретает в пределах суммы, которую оно выплатило, в порядке суброгации права по настоящей Конвенции, принадлежащие лицу, получившему такое возмещение. Никакое лицо не приобретает, таким образом, прав в такой степени, в какой оператор имеет право регресса в отношении такого лица согласно настоящей Конвенции.

b) Ничто в настоящей Конвенции не препятствует оператору, который выплатил возмещение за ядерный ущерб из средств, за исключением средств, предоставленных в соответствии с пунктом 1 статьи VII, получить обратно от лица, предоставляющего финансовое обеспечение в соответствии с упомянутым пунктом, или от отвечающего за установку государства в пределах размера, который он выплатил, сумму, которую лицо, получившее такое возмещение, получило бы согласно настоящей Конвенции.

Статья X

Оператор имеет право регресса только в двух случаях:

a) если это право ясно предусмотрено письменным контрактом;

b) если ядерный инцидент произошел в результате действия или бездействия с намерением причинить ущерб – против физического лица, которое действовало или бездействовало с таким намерением.

Статья XI

1. За исключением случаев, когда в этой статье предусмотрено иное, юрисдикцией в отношении исков, согласно статье II, обладают суды только той Договаривающейся стороны, в пределах территории которой произошел ядерный инцидент.

2. Если ядерный инцидент произошел вне территории любой Договаривающейся стороны или если место ядерного инцидента нельзя точно определить, то юрисдикцией в отношении таких исков обладают суды отвечающего за установку государства, оператор которого несет ответственность.

3. Если согласно пункту 1 или 2 этой статьи юрисдикцией могут обладать суды более чем одной Договаривающейся стороны, то юрисдикцией обладают:

a) если ядерный инцидент произошел частично вне территории любой Договаривающейся стороны и частично в пределах территории одной Договаривающейся стороны, – суды последней; и

b) в любом ином случае – суды той Договаривающейся стороны, которая определена соглашением между Договаривающимися сторонами, суды которых были компетентными согласно пункту 1 или 2 данной статьи.

Статья XII

1. Окончательное решение, вынесенное судом, имеющим юрисдикцию согласно статье XI, признается в пределах территории любой другой Договаривающейся стороны, за исключением случаев:

a) когда судебное решение было получено обманным путем;

b) когда стороне, против которой было вынесено судебное решение, не было предоставлено достаточной возможности изложить свое дело; или

c) когда судебное решение противоречит общественному правопорядку Договаривающейся стороны, в пределах территории которой требуется признание, или не соответствует основным нормам правосудия.

2. Окончательное судебное решение, которое признано, по представлении его к исполнению в соответствии с формальностями, требуемыми законодательством той Договаривающейся стороны, в которой оно подлежит исполнению, обладает обязательной силой, как если бы оно было решением суда этой Договаривающейся стороны.

3. Существо иска, по которому вынесено такое судебное решение, не подлежит последующему разбирательству.

Статья XIII

Настоящая Конвенция и подлежащее применению в соответствии с ней национальное законодательство применяются без дискриминации по признаку гражданства, постоянного или временного местожительства.

Статья XIV

За исключением мер по исполнению, нельзя ссылаться на иммунитеты от юрисдикции согласно нормам национального законодательства или международного права, когда иски возбуждены согласно настоящей Конвенции в судах, которые являются компетентными в соответствии со статьей XI.

Статья XV

Договаривающиеся стороны принимают соответствующие меры для обеспечения того, чтобы возмещение за ядерный ущерб, процент и судебные

издержки, устанавливаемые судом в связи с ядерным ущербом, страховые и перестраховочные премии, а также суммы, предоставляемые страхованием, перестрахованием или другим финансовым обеспечением, или суммы, предоставляемые отвечающим за установку государством, в соответствии с настоящей Конвенцией, свободно переводилось в валюту той Договаривающейся стороны, в пределах территории которой понесен этот ущерб, и в валюту той Договаривающейся стороны, в пределах территории которой обычно проживает истец, а что касается страховых или перестраховочных премий и платежей – в валюты, указанные в таком страховом или перестраховочном контракте.

Статья XVI

Никакое лицо не имеет права на получение возмещения согласно настоящей Конвенции в размере, в каком оно уже получило возмещение в отношении того же самого ядерного ущерба согласно другой международной конвенции о гражданской ответственности в области ядерной энергии.

Статья XVII

Настоящая Конвенция не затрагивает, в том что касается сторон в них, применения любых международных соглашений или международных конвенций, о гражданской ответственности в области ядерной энергии, действующих, открытых для подписания, ратификации или присоединения в день открытия для подписания настоящей Конвенции.

Статья XVIII

Настоящая Конвенция не должна толковаться как затрагивающая права, если таковые существуют, Договаривающейся стороны согласно общим положениям международного публичного права в отношении ядерного ущерба.

Статья XIX

1. ЛюбаяДоговаривающаяся сторона, заключающая соглашение согласно подпункту b) пункта 3 статьи XI, должна незамедлительно представить копию такого соглашения Генеральному директору Международного агентства по атомной энергии для информации и распространению среди других Договаривающихся сторон.

2. Договаривающиеся стороны представляют Генеральному директору для информации и распространения среди других Договаривающихся сторон тексты своих законов и правил, касающихся вопросов, которые подпадают под действие настоящей Конвенции.

Статья XX

Независимо от прекращения применения настоящей Конвенции в отношении любой Договаривающейся стороны путем прекращения применения в

соответствии со статьей XXV или денонсации в соответствии со статьей XXVI, положения настоящей Конвенции продолжают применяться в отношении любого ядерного ущерба, причиненного ядерным инцидентом, происшедшим до такого прекращения.

Статья XXI

Настоящая Конвенция открыта для подписания государствами, представленными на Международной конференции по гражданской ответственности за ядерный ущерб, состоявшейся в Вене с 29 апреля по 19 мая 1963 года.

Статья XXII

Настоящая Конвенция подлежит ратификации, и ратификационные грамоты сдаются на хранение Генеральному директору Международного агентства по атомной энергии.

Статья XXIII

Настоящая Конвенция вступает в силу через три месяца после сдачи на хранение пятой ратификационной грамоты, а в отношении каждого государства, которое ратифицирует ее после этого,– через три месяца после сдачи на хранение ратификационной грамоты этим государством.

Статья XXIV

1. Все государства-члены Организации Объединенных Наций или члены любых специализированных учреждений, или Международного агентства по атомной энергии, не представленные на Международной конференции по гражданской ответственности за ядерный ущерб, состоявшейся в Вене с 29 апреля по 19 мая 1963 года, могут присоединиться к настоящей Конвенции.

2. Акты о присоединении сдаются на хранение Генеральному директору Международного агентства по атомной энергии.

3. Настоящая Конвенция вступает в силу в отношении присоединившегося государства через три месяца со дня сдачи на хранение акта о присоединении этого государства, но не ранее даты вступления в силу настоящей Конвенции в соответствии со статьей XXIII.

Статья XXV

1. Настоящая Конвенция действует в течение десяти лет с даты вступления ее в силу. Любая Договаривающаяся сторона может, уведомив Генерального директора Международного агентства по атомной энергии по крайней мере за двенадцать месяцев до истечения этого периода, прекратить применение настоящей Конвенции в отношении себя в конце этого десятилетнего периода.

2. Настоящая Конвенция после десятилетнего периода остается в силе дополнительно пять лет для таких Договаривающихся сторон, которые не прекратили ее применения в соответствии с пунктом 1 данной статьи, и после этого – на последующие периоды в пять лет каждый – для тех Договаривающихся сторон, которые не прекратили ее применения в конце одного из таких периодов, уведомив об этом, по крайней мере, за двенадцать месяцев до истечения одного из таких периодов Генерального директора Международного агентства по атомной энергии.

Статья XXVI

1. Генеральный директор Международного агентства по атомной энергии созывает конференцию для пересмотра настоящей Конвенции в любое время по истечении пяти лет с даты вступления ее в силу, если этого пожелает одна треть Договаривающихся сторон.

2. Любая Договаривающаяся сторона может денонсировать настоящую Конвенцию, уведомив Генерального директора Международного агентства по атомной энергии в течение двенадцати месяцев после первой конференции по пересмотру Конвенции, созванной в соответствии с пунктом 1 данной статьи.

3. Денонсация считается действительной по истечении одного года со дня получения уведомления об этом Генеральным директором Международного агентства по атомной энергии.

Статья XXVII

Генеральный директор Международного агентства по атомной энергии уведомляет государства, приглашенные на Международную конференцию по гражданской ответственности за ядерный ущерб, состоявшуюся в Вене с 29 апреля по 19 мая 1963 года, и государства, присоединившиеся к настоящей Конвенции, относительно:

a) документов о подписании, ратификации и присоединении, полученных в соответствии со статьями XXI, XXII и XXIV;

b) даты, когда Конвенция вступает в силу в соответствии со статьей XXIII;

c) документов о прекращении применения и денонсации, полученных в соответствии со статьями XXV и XXVI;

d) просьб о созыве конференции по пересмотру Конвенции в соответствии со статьей XXVI.

Статья XXVIII

Настоящая Конвенция будет зарегистрирована Генеральным директором Международного агентства по атомной энергии в соответствии со статьей 102 Устава Организации Объединенных Наций.

Статья XXIX

Подлинник настоящей Конвенции, тексты которого на английском, испанском, русском и французском языках являются равно аутентичными, будет сдан на хранение Генеральному директору Международного агентства по атомной энергии, который разошлет его заверенные копии.

CONVENCION DE VIENA SOBRE RESPONSABILIDAD CIVIL POR DAÑOS NUCLEARES
Viena, 21 de Mayo de 1963

LAS PARTES CONTRATANTES,

HABIENDO RECONOCIDO la conveniencia de fijar normas mínimas que ofrezcan una protección financiera contra los daños derivados de determinadas aplicaciones pacíficas de la energía nuclear,

CONVENCIDAS de que una convención sobre responsabilidad civil por daños nucleares contribuirá también a instaurar relaciones amistosas entre las naciones, independientemente de sus diferentes regímenes constitucionales y sociales,

HAN DECIDIDO concertar a tal efecto una Convención y, en consecuencia, han acordado lo que sigue:

Artículo I

1. A los efectos de la presente Convención:

a) Por «persona» se entenderá toda persona física, toda persona jurídica de derecho público o de derecho privado, toda entidad pública o privada aunque no tenga personalidad jurídica, toda organización internacional que tenga personalidad jurídica con arreglo a la legislación del Estado de la instalación y todo Estado o cualesquiera de sus subdivisiones políticas.

b) La expresión «nacional de una Parte Contratante» comprenderá la Parte Contratante o cualquiera de las subdivisiones políticas de su territorio, toda persona jurídica de derecho público o de derecho privado y toda entidad pública o privada establecida en el territorio de una Parte Contratante, aunque no tenga personalidad jurídica.

c) Por «explotador» de una instalación nuclear se entenderá la persona designada o reconocida por el Estado de la instalación como explotador de dicha instalación.

d) Por «Estado de la instalación» respecto de una instalación nuclear, se entenderá la Parte Contratante en cuyo territorio esté la instalación nuclear o bien, si la instalación nuclear no está en el territorio de ningún Estado, la Parte Contratante que explote la instalación nuclear o haya autorizado su explotación.

e) Por «legislación del tribunal competente» se entenderá la legislación del tribunal que sea competente con arreglo a la presente Convención, incluidas las normas de dicha legislación que regulen los conflictos de leyes.

f) Por «combustibles nucleares» se entenderá las sustancias que puedan producir energía mediante un proceso automantenido de fisión nuclear.

g) Por «productos o desechos radiactivos» se entenderá los materiales radiactivos producidos durante el proceso de producción o utilización de combustibles nucleares o cuya radiactividad se haya originado por la exposición a las radiaciones inherentes a dicho proceso, salvo los radioisótopos que hayan alcanzado la etapa final de su elaboración y puedan ya utilizarse con fines científicos, médicos, agrícolas, comerciales o industriales.

h) Por «sustancias nucleares» se entenderá:

i) los combustibles nucleares, salvo el uranio natural y el uranio empobrecido, que por sí solos o en combinación con otras sustancias puedan producir energía mediante un proceso automantenido de fisión nuclear fuera de un reactor nuclear;

ii) los productos o desechos radiactivos.

i) Por «reactor nuclear» se entenderá cualquier estructura que contenga combustibles nucleares dispuestos de tal modo que dentro de ella pueda tener lugar un proceso automantenido de fisión nuclear sin necesidad de una fuente adicional de neutrones.

j) Por «instalación nuclear» se entenderá:

i) los reactores nucleares, salvo los que se utilicen como fuente de energía en un medio de transporte aéreo o marítimo, tanto para su propulsión como para otros fines;

ii) las fábricas que utilicen combustibles nucleares para producir sustancias nucleares, y las fábricas en que se proceda al tratamiento de sustancias nucleares, incluidas las instalaciones de regeneración de combustibles nucleares irradiados;

iii) las instalaciones de almacenamiento de sustancias nucleares, excepto los lugares en que dichas sustancias se almacenen incidentalmente durante su transporte,

en la inteligencia de que el Estado de la instalación podrá determinar que se considere como una sola instalación nuclear a varias instalaciones nucleares de un solo explotador que estén ubicadas en un mismo lugar.

k) Por «daños nucleares» se entenderá:

i) la pérdida de vidas humanas, las lesiones corporales y los daños y perjuicios materiales que se produzcan como resultado directo o indirecto de las propiedades radiactivas o de su combinación con las propiedades tóxicas, explosivas u otras propiedades peligrosas de los combustibles nucleares o de los productos o desechos radiactivos que se encuentren en una instalación nuclear, o de las sustancias nucleares que procedan de ella, se originen en ella o se envíen a ella;

ii) los demás daños y perjuicios que se produzcan u originen de esta manera en cuanto así lo disponga la legislación del tribunal competente;

iii) si así lo dispone la legislación del Estado de la instalación, la pérdida de vidas humanas, las lesiones corporales y los daños y perjuicios materiales que se produzcan como resultado directo o indirecto de otras radiaciones ionizantes que emanen de cualquier otra fuente de radiaciones que se encuentre dentro de una instalación nuclear.

l) Por «accidente nuclear» se entenderá cualquier hecho o sucesión de hechos que tengan el mismo origen y hayan causado daños nucleares.

2. El Estado de la instalación podrá excluir del ámbito de la presente Convención cualquier cantidad pequeña de sustancias nucleares siempre que lo permita la reducida importancia de los peligros inherentes a tal decisión y siempre que:

a) los límites máximos para la exclusión de tales cantidades hayan sido determinados por la Junta de Gobernadores del Organismo Internacional de Energía Atómica ;

b) la cantidad de sustancias nucleares excluidas por el Estado de la instalación no exceda de los referidos límites.

La Junta de Gobernadores revisará periódicamente los límites máximos.

Artículo II

1. El explotador de una instalación nuclear será responsable de los daños nucleares si se prueba que esos daños han sido ocasionados por un accidente nuclear:

a) que ocurra en su instalación nuclear;

b) en el que intervengan sustancias nucleares procedentes de su instalación nuclear o que se originen en ella, cuando el accidente acaezca;

i) antes de que el explotador de otra instalación nuclear haya asumido expresamente por contrato escrito la responsabilidad de los accidentes nucleares en que intervengan las sustancias;

ii) antes de que el explotador de otra instalación nuclear se haya hecho cargo de las sustancias nucleares, si la responsabilidad no se ha asumido expresamente por contrato escrito;

iii) antes de que la persona que esté debidamente autorizada para tener a su cargo un reactor nuclear que se utilice como fuente de energía en un medio de transporte, para su propulsión o para otros fines, se haya hecho cargo de las sustancias nucleares si estaban destinadas a ser utilizadas en ese reactor nuclear;

iv) antes de que las sustancias nucleares hayan sido descargadas del medio de transporte en que hayan llegado al territorio de un Estado que no sea Parte Contratante, cuando esas sustancias hayan sido enviadas a una persona que se encuentre en el territorio de ese Estado;

c) en el que intervengan sustancias nucleares enviadas a su instalación nuclear, cuando el accidente acaezca:

i) después de que el explotador haya asumido expresamente por contrato escrito la responsabilidad de los accidentes nucleares en que intervengan las sustancias nucleares, que recaía en el explotador de otra instalación nuclear;

ii) después de que el explotador se haya hecho cargo de las sustancias nucleares, si la responsabilidad no se ha asumido expresamente por contrato escrito;

iii) después de que se haya hecho cargo de esas sustancias nucleares la persona que tenga a su cargo un reactor nuclear que se utilice como fuente de energía en un medio de transporte, para su propulsión o para otros fines;

iv) después de que las sustancias nucleares hayan sido cargadas en el medio de transporte en que han de ser expedidas desde el territorio de un Estado que no sea Parte Contratante, cuando esas sustancias hayan sido enviadas con el consentimiento escrito del explotador de dicho Estado,

quedando entendido que, si los daños nucleares han sido causados por un accidente nuclear que ocurra en una instalación nuclear y en el que intervengan sustancias nucleares almacenadas incidentalmente en ella con ocasión del transporte de dichas sustancias, las disposiciones del apartado a) del presente párrafo no se aplicarán cuando otro explotador u otra persona sea exclusivamente responsable en virtud de lo dispuesto en los apartados b) o c) del presente párrafo.

2. El Estado de la instalación podrá disponer por vía legislativa que, con las condiciones que estipule su legislación nacional, un transportista de sustancias nucleares o una persona que manipule desechos radiactivos puedan ser considerados o reconocidos como explotadores en relación, respectivamente, con las sustancias nucleares o con los desechos radiactivos y en sustitución del explotador interesado, si ese transportista o esa persona lo pide y el explotador consiente. En tal caso, ese transportista o esa persona serán considerados a todos los efectos de la presente Convención como explotadores de una instalación nuclear en el territorio de dicho Estado.

3. a) Cuando la responsabilidad por daños nucleares recaiga en más de un explotador, esos explotadores, en la medida en que no se pueda determinar con certeza qué parte de los daños ha de atribuirse a cada uno de ellos, serán mancomunada y solidariamente responsables.

b) Cuando la responsabilidad recaiga sobre más de un explotador como consecuencia de un accidente nuclear que ocurra durante el transporte de sustancias nucleares, sea en un mismo medio de transporte, sea en una misma instalación nuclear, la responsabilidad global no rebasará el límite más alto que corresponda aplicar a cada uno de ellos de conformidad con lo dispuesto en el artículo V.

c) En ninguno de los casos previstos en los apartados a) y b) del presente párrafo podrá exceder la responsabilidad de un explotador del importe que en lo que le concierne se fije de conformidad con lo dispuesto en el artículo V.

4. Sin perjuicio de lo dispuesto en el párrafo 3 del presente artículo, cuando un accidente nuclear afecte a varias instalaciones nucleares del mismo explotador, éste será responsable en relación con cada una de estas instalaciones hasta el límite que corresponda aplicarle de conformidad con lo dispuesto en el artículo V.

5. Sin perjuicio de lo dispuesto en la presente Convención, sólo podrá considerarse responsable de los daños nucleares al explotador. No obstante, esta disposición no afectará a la aplicación de ninguno de los acuerdos internacionales de transporte vigentes o abiertos a la firma, ratificación o adhesión en la fecha en que quede abierta a la firma la presente Convención.

6. Ninguna persona será responsable de las pérdidas o daños que no sean daños nucleares de conformidad con lo dispuesto en el apartado k) del párrafo 1 del artículo I pero que hubieran podido ser considerados como daños nucleares de conformidad con lo dispuesto en el inciso ii) del apartado k) de dicho párrafo.

7. Sólo se podrá entablar acción directa contra la persona que dé una garantía financiera de conformidad con lo dispuesto en el artículo VII si así lo dispone la legislación del tribunal competente.

Artículo III

El explotador que sea responsable con arreglo a la presente Convención entregará al transportista un certificado extendido por el asegurador o por la persona que haya dado la garantía financiera con arreglo al artículo VII, o en su nombre. En el certificado se hará constar el nombre y la dirección de dicho explotador, y el importe, tipo y duración de la garantía; estos datos no podrán ser impugnados por la persona que haya extendido el certificado o lo haya hecho extender. El certificado indicará asimismo las sustancias nucleares cubiertas por la garantía y contendrá una declaración de la autoridad pública competente del Estado de la instalación haciendo constar que la persona designada en el certificado es un explotador en el sentido de la presente Convención.

Artículo IV

1. La responsabilidad del explotador por daños nucleares con arreglo a la presente Convención será objetiva.

2. Si el explotador prueba que la persona que sufrió los daños nucleares los produjo o contribuyó a ellos por negligencia grave o por acción u omisión dolosa, el tribunal competente podrá, si así lo dispone su propia legislación, exonerar total o parcialmente al explotador de su obligación de abonar una indemnización por los daños sufridos por dicha persona.

3. a) Con arreglo a la presente Convención no engendrarán responsabilidad alguna para el explotador los daños nucleares causados por un accidente nuclear que se deba directamente a conflicto armado, hostilidades, guerra civil o insurrección.

b) Salvo en la medida en que la legislación del Estado de la instalación disponga lo contrario, el explotador será responsable de los daños nucleares causados por un accidente nuclear que se deba directamente a una catástrofe natural de carácter excepcional.

4. Cuando los daños nucleares y otros daños que no sean nucleares hayan sido originados por un accidente nuclear, o conjuntamente por un accidente nuclear y otra u otras causas diversas, se considerará, a los efectos de la presente Convención, que los daños no nucleares, en la medida en que no puedan diferenciarse con certeza de los daños nucleares, son daños nucleares originados por el accidente nuclear. Sin embargo, cuando los daños nucleares hayan sido causados conjuntamente por un accidente nuclear cubierto por la presente Convención y por una emisión de radiaciones ionizantes que no esté cubierta por ella, ninguna cláusula de la presente Convención limitará ni modificará la responsabilidad que, sea respecto de cualquier persona que haya sufrido los daños nucleares, sea como consecuencia de la interposición de un recurso o de una demanda de repetición, recaiga en las

personas a quienes incumba la responsabilidad por esa emisión de radiaciones ionizantes.

5. El explotador no será responsable con arreglo a la presente Convención por los daños nucleares sufridos:

a) por la instalación nuclear propiamente dicha o por los bienes que se encuentren en el recinto de la instalación y que se utilicen o se vayan a utilizar en relación con la misma;

b) por el medio de transporte en el que al producirse el accidente nuclear se hallasen las sustancias nucleares que hayan intervenido en él.

6. Los Estados de la instalación podrán disponer por vía legislativa que no se aplique el apartado b) del párrafo 5 del presente artículo, siempre y cuando la responsabilidad del explotador por los daños nucleares, excluidos los sufridos por el medio de transporte, no se reduzca en ningún caso a una cantidad inferior a 5 millones de dólares de los Estados Unidos por cada accidente nuclear.

7. Ninguna de las disposiciones de la presente Convención afectará:

a) a la responsabilidad de una persona física que por acto u omisión dolosa haya causado un daño nuclear que de conformidad con lo dispuesto en los párrafos 3 ó 5 del presente artículo no impone responsabilidad alguna al explotador con arreglo a la presente Convención;

b) a la responsabilidad que, con arreglo a disposiciones distintas de las de la presente Convención, recaiga en el explotador por daños nucleares respecto de los cuales, de conformidad con lo dispuesto en el apartado b) del párrafo 5 del presente artículo, no es responsable con arreglo a la presente Convención.

Artículo V

1. El Estado de la instalación podrá limitar el importe de la responsabilidad del explotador a una suma no inferior a 5 millones de dólares de los Estados Unidos por cada accidente nuclear.

2. El importe máximo de la responsabilidad que se haya fijado de conformidad con lo dispuesto en el presente artículo no incluirá los intereses devengados ni los gastos y costas fijados por el tribunal en las demandas de resarcimiento de daños nucleares.

3. El dólar de los Estados Unidos a que se hace mención en la presente Convención es una unidad de cuenta equivalente al valor oro del dólar de los Estados Unidos en 29 de abril de 1963, que era de 35 dólares por onza troy de oro fino.

4. La suma indicada en el párrafo 6 del artículo IV y en el párrafo 1 del presente artículo podrá redondearse al convertirla en moneda nacional.

Artículo VI

1. El derecho a reclamar una indemnización en virtud de la presente Convención se extinguirá si no se entabla la correspondiente acción dentro del plazo de diez años a contar desde la fecha en que se produjo el accidente nuclear. Sin embargo, si según la legislación del Estado de la instalación la responsabilidad del explotador está cubierta por un seguro u otra garantía financiera o con fondos públicos durante un plazo superior a diez años, la legislación del tribunal competente podrá disponer que el derecho a reclamar una indemnización al explotador sólo se extinguirá después de un plazo que podrá ser superior a diez años pero que no excederá del plazo en que su responsabilidad esté cubierta según la legislación del Estado de la instalación. La prórroga del plazo de extinción no perjudicará en ningún caso los derechos a indemnización que, en virtud de la presente Convención, correspondan a una persona que antes de haber vencido el plazo de diez años haya entablado acción contra el explotador para reclamar una indemnización por pérdida de vida o lesiones corporales.

2. Cuando los daños nucleares se hayan debido a un accidente nuclear en el que intervengan sustancias nucleares que en el momento de ocurrir el accidente nuclear hubiesen sido objeto de robo, pérdida, echazón o abandono, el plazo fijado de conformidad con lo dispuesto en el párrafo 1 del presente artículo se contará a partir de la fecha en que ocurrió dicho accidente nuclear, pero en ningún caso podrá ser superior a veinte años a partir de la fecha en que tuvo lugar el robo, la pérdida, la echazón o el abandono.

3. La legislación del tribunal competente podrá fijar otro plazo de extinción o prescripción de ese derecho, que se contará a partir de la fecha en que la víctima de los daños nucleares tuvo o bubiera debido tener conocimiento de dichos daños y del explotador responsable de ellos, y que no podrá ser inferior a tres años ni superior a los plazos fijados de conformidad con lo dispuesto en los párrafos 1 y 2 del presente artículo.

4. Salvo cuando la legislación del tribunal competente disponga otra cosa, toda persona que alegue haber sufrido daños nucleares y que haya entablado una acción por daños y perjuicios dentro del plazo que corresponda de conformidad con lo dispuesto en el presente artículo, podrá modificar su demanda para que comprenda cualquier agravación de esos daños, aunque haya expirado dicho plazo, siempre que no haya recaído todavía sentencia definitiva.

5. Si la competencia debe atribuirse de conformidad con lo dispuesto en el apartado b) del párrafo 3 del artículo XI y dentro del plazo aplicable en virtud del presente artículo se ha pedido a una Parte Contratante facultada para atribuir la competencia que así lo haga, pero el tiempo que quedase después de tal atribución fuese de menos de seis meses, el período dentro

del cual cabe entablar accion sera de seis meses, contados a partir de la fecha de la atribución de la competencia.

Artículo VII

1. El explotador deberá mantener un seguro u otra garantía financiera que cubra su responsabilidad por los daños nucleares. La cuantía, naturaleza y condiciones del seguro o de la garantía serán fijadas por el Estado de la instalación. El Estado de la instalación garantizará el pago de las indemnizaciones por daños nucleares que se reconozca ha de abonar el explotador, aportando para ello las cantidades necesarias en la medida en que el seguro o la garantía financiera no basten para cubrir las indemnizaciones, pero sin rebasar el límite que se haya podido fijar de conformidad con lo dispuesto en el artículo V.

2. Ninguna de las disposiciones del párrafo 1 obliga a las Partes Contratantes ni a ninguna de sus subdivisiones políticas, tales como Estados o Repúblicas, a mantener un seguro u otra garantía financiera para cubrir su responsabilidad como explotadores.

3. Los fondos correspondientes al seguro, a la garantía financiera o a la indemnización del Estado de la instalación que se prevén en el párrafo 1 del presente artículo se destinarán exclusivamente al resarcimiento de los daños cubiertos por la presente Convención.

4. El asegurador o la persona que haya dado una garantía financiera de conformidad con lo dispuesto en el párrafo 1 del presente artículo no podrán suspender ni cancelar el seguro o la garantía sin avisar por escrito a la autoridad pública competente con dos meses de antelación por lo menos, o si el seguro o la garantía se refieren al transporte de sustancias nucleares, mientras dure dicho transporte.

Artículo VIII

Sin perjuicio de lo dispuesto en la presente Convención, la naturaleza, forma e importancia de la indemnización, así como la distribución equitativa de la misma, se regirán por la legislación del tribunal competente.

Artículo IX

1. Cuando los regímenes de seguro sobre enfermedad, seguridad social, accidentes del trabajo y enfermedades profesionales prescriban la indemnización de los daños nucleares, la legislación de la Parte Contratante o la reglamentación de la organización intergubernamental que los haya estable-

cido especificará los derechos de reparación con arreglo a la presente Convención de los beneficiarios de dichos regímenes, así como los recursos contra el explotador responsable que pueden ejercitarse sin perjuicio de lo dispuesto en la presente Convención.

2. a) Si una persona distinta del explotador y que sea nacional de una Parte Contratante hubiese abonado una indemnización por daños nucleares de conformidad con una convención internacional o con la legislación de un Estado que no sea Parte Contratante, esa persona adquirirá por subrogación los derechos que hubieran correspondido al indemnizado con arreglo a la presente Convencion, hasta el límite correspondiente a la cantidad que haya pagado. No podrán beneficiarse de la subrogación las personas contra las que el explotador tenga derecho de repetición con arreglo a la presente Convención.

b) Ninguna de las disposiciones de la presente Convención impedirá que un explotador que haya pagado una indemnización por daños nucleares sin recurrir a los fondos facilitados de conformidad con lo dispuesto en el párrafo 1 del artículo VII, obtenga de la persona que dé una garantía financiera de conformidad con lo dispuesto en ese párrafo, o del Estado de la instalación, hasta la cuantía de la indemnización que el explotador haya abonado, el reembolso de la suma que la persona indemnizada hubiera obtenido con arreglo a la presente Convención.

Artículo X

El explotador sólo tendrá derecho de repetición:

a) cuando así se haya estipulado expresamente en un contrato escrito;

b) cuando el accidente nuclear resulte de un acto u omisión con intención dolosa, en cuyo caso se ejercitará contra la persona que hubiese obrado o dejado de obrar con tal intención.

Artículo XI

1. Sin perjuicio de lo dispuesto en el presente artículo, los únicos tribunales competentes para conocer de las acciones entabladas de conformidad con lo dispuesto en el artículo II serán los de la Parte Contratante en cuyo territorio haya tenido lugar el accidente nuclear.

2. Cuando el accidente nuclear haya tenido lugar fuera del territorio de cualquiera de las Partes Contratantes, o cuando no sea posible determinar con certeza el lugar del accidente nuclear, los tribunales competentes para conocer de esas acciones serán los del Estado de la instalación del explotador responsable.

3. Cuando, de conformidad con lo dispuesto en los párrafos 1 y 2 del presente artículo, sean competentes los tribunales de dos o más Partes Contratantes, la competencia se atribuirá:

a) si el accidente nuclear ha ocurrido parcialmente fuera del territorio de toda Parte Contratante, y parcialmente en el de una sola Parte Contratante, a los tribunales de esta última;

b) en todos los demás casos, a los tribunales de la Parte Contratante que determinen de común acuerdo las Partes Contratantes cuyos tribunales sean competentes de conformidad con lo dispuesto en los párrafos 1 y 2 del presente artículo.

Artículo XII

1. La sentencia definitiva distada por un tribunal al que corresponda la competencia en virtud del artículo XI de la presente Convención será reconocida en el territorio de cualquier otra Parte Contratante a menos que:

a) la sentencia se haya obtenido mediante fraude;

b) no se le haya dado a la parte contra la que se dicte la sentencia la posibilidad de presentar su causa en condiciones equitativas;

c) la sentencia sea contraria al orden público de la Parte Contratante en la que se gestione su reconocimiento, o no se ajuste a las normas fundamentales de la justicia.

2. Toda sentencia definitiva que sea reconocida tendrá fuerza ejecutoria, una vez trasladada para su ejecución de conformidad con las formalidades exigidas por la legislación de la Parte Contratante en la que se gestione la ejecución, como si se tratase de una sentencia dictada por un tribunal de esa Parte Contratante.

3. Una vez que se haya dictado la sentencia no podrá revisarse el litigio en cuanto al fondo.

Artículo XIII

Las disposiciones de la presente Convención y de la legislación nacional que corresponda aplicar en virtud de ella se ejecutarán sin discriminación de ningún género por razones de nacionalidad, domicilio o residencia.

Artículo XIV

No podrán alegarse inmunidades de jurisdicción al amparo de la legislación nacional o del derecho internacional, por acciones entabladas con arre-

glo a la presente Convención ante los tribunales competentes de conformidad con lo dispuesto en el artículo XI, salvo en lo que respecta a las medidas de ejecución.

Artículo XV

Las Partes Contratantes adoptarán las medidas oportunas para que las indemnizaciones pagaderas por daños nucleares, los intereses devengados y las costas que los tribunales adjudiquen al respecto, las primas de seguro y reaseguro, y los fondos correspondientes al seguro, al reaseguro o a las demás garantías financieras, o los fondos facilitados por el Estado de la instalación, de conformidad con lo dispuesto en la presente Convención, puedan transferirse libremente en la moneda de la Parte Contratante en cuyo territorio se produjeron los daños, en la de la Parte Contratante en cuyo territorio se encuentre domiciliado habitualmente el demandante, y, respecto de las primas y pagos correspondientes al seguro y reaseguro, en la moneda que se especifique en la póliza correspondiente.

Artículo XVI

Nadie tendrá derecho a obtener una indemnización con arreglo a la presente Convención en la medida en que haya obtenido ya una indemnización por los mismos daños nucleares con arreglo a otra convención internacional sobre responsabilidad civil en materia de energía nuclear.

Artículo XVII

La presente Convención no modifica la aplicación de los acuerdos o convenciones internacionales sobre responsabilidad civil en materia de energía nuclear que estén en vigor o abiertos a la firma, a la ratificación o a la adhesión en la fecha en que la presente Convención quede abierta a la firma, por lo que respecta a las Partes Contratantes de esos acuerdos o convenciones.

Artículo XVIII

La presente Convención no podrá interpretarse en el sentido de que afecta a los derechos que una Parte Contratante pueda tener con arreglo a las normas generales del derecho internacional público en materia de daños nucleares.

Artículo XIX

1. Las Partes Contratantes que concierten un acuerdo de conformidad con lo dispuesto en el apartado b) del párrafo 3 del artículo XI enviarán inmediatamente una copia del texto de tal acuerdo al Director General del Organismo Internacional de Energía Atómica para su conocimiento y para que se lo comunique a las demás Partes Contratantes.

2. Las Partes Contratantes pondrán en conocimiento del Director General del Organismo Internacional de Energía Atómica el texto de sus leyes y reglamentos referentes a las cuestiones que constituyen el objeto de la presente Convención, para que se lo comunique a las demás Partes Contratantes.

Artículo XX

Aunque una Parte Contratante haya dado por terminada la aplicación de la presente Convención por lo que a ella respecta de conformidad con lo dispuesto en el artículo XXV o la haya denunciado de conformidad con lo dispuesto en el artículo XXVI, sus disposiciones seguirán aplicándose a todos los daños nucleares causados por un accidente nuclear ocurrido antes de la fecha en que la presente Convención deje de aplicarse respecto de esa Parte Contratante.

Artículo XXI

La presente Convención se abrirá a la firma de los Estados representados en la Conferencia Internacional sobre Responsabilidad Civil por Daños Nucleares, celebrada en Viena del 29 de abril al 19 de mayo de 1963.

Artículo XXII

La presente Convención habrá de ser ratificada y los instrumentos de ratificación se depositarán en poder del Director General del Organismo Internacional de Energía Atómica.

Artículo XXIII

La presente Convención entrará en vigor tres meses después de la fecha en que se haya depositado el quinto instrumento de ratificación, y, para los Estados que la ratifiquen después de haber entrado en vigor, tres meses después de que el Estado de que se trate haya depositado su instrumento de ratificación.

Artículo XXIV

1. Todos los Estados que sean Miembros de las Naciones Unidas, de cualquiera de los organismos especializados o del Organismo Internacional de Energía Atómica y que no hayan estado representados en la Conferencia Internacional sobre Responsabilidad Civil por Daños Nucleares, celebrada en Viena del 29 de abril al 19 de mayo de 1963, podrán adherirse a la presente Convención.

2. Los instrumentos de adhesión se depositarán en poder del Director General del Organismo Internacional de Energía Atómica.

3. Para cada uno de los Estados que se adhieran a ella, la presente Convención entrará en vigor tres meses después de la fecha en que haya depositado el instrumento de adhesión, siempre que haya entrado ya en vigor de conformidad con lo dispuesto en el artículo XXIII.

Artículo XXV

1. La presente Convención surtirá efecto durante un plazo de diez años a partir de la fecha de su entrada en vigor. Una Parte Contratante podrá dar por terminada la aplicación de la presente Convención al final del plazo de diez años por lo que a dicha Parte se refiere, notificándolo por lo menos con doce meses de antelación al Director General del Organismo Internacional de Energía Atómica.

2. Después de dicho plazo de diez años, la vigencia de la presente Convención se extenderá por un nuevo plazo de cinco años para aquellas Partes Contratantes que no hayan dado por terminada su aplicación de conformidad con lo dispuesto en el párrafo 1 del presente artículo, y, posteriormente, por plazos sucesivos de cinco años para aquellas Partes Contratantes que no hayan dado por terminada su aplicación al final de uno de esos plazos de cinco años notificándolo al Director General del Organismo Internacional de Energía Atómica por lo menos doce meses antes de que expire el plazo correspondiente.

Artículo XXVI

1. En cualquier momento después de haber expirado un plazo de cinco años a partir de la fecha en que la presente Convención haya entrado en vigor, el Director General del Organismo Internacional de Energía Atómica podrá convocar una conferencia para estudiar su revisión si un tercio de las Partes Contratantes manifestase el deseo de hacerlo.

2. Cada una de las Partes Contratantes podrá denunciar la presente Convención notificándolo al Director General del Organismo Internacional de

Energía Atómica dentro de un plazo de doce meses a partir de la primera conferencia de revisión que se celebre de conformidad con lo dispuesto en el párrafo 1 del presente artículo.

3. La denuncia surtirá efecto un año después de la fecha en que el Director General del Organismo Internacional de Energía Atómica haya recibido la correspondiente notificación.

Artículo XXVII

El Director General del Organismo Internacional de Energía Atómica notificará a los Estados invitados a la Conferencia Internacional sobre Responsabilidad Civil por Daños Nucleares, celebrada en Viena del 29 de abril al 19 de mayo de 1963, así como a los Estados que se hayan adherido a la presente Convención:

a) las firmas, así como los instrumentos de ratificación o de adhesión que se hayan recibido de conformidad con lo dispuesto en los artículos XXI, XXII y XXIV;

b) la fecha en que entrará en vigor la presente Convención de conformidad con lo dispuesto en el artículo XXIII;

c) las notificaciones de denuncia y de terminación que se hayan recibido de conformidad con lo dispuesto en los artículos XXV y XXVI;

d) las peticiones para convocar una conferencia de revisión que se hayan recibido de conformidad con lo dispuesto en el artículo XXVI.

Artículo XXVIII

El Director General del Organismo Internacional de Energía Atómica inscribirá en el Registro la presente Convención de conformidad con lo dispuesto en el Artículo 102 de la Carta de las Naciones Unidas.

Artículo XXIX

El original de la presente Convención, cuyos textos en español, francés, inglés y ruso son igualmente auténticos, quedará depositado en poder del Director General del Organismo Internacional de Energía Atómica, quien facilitará copias certificadas del mismo.

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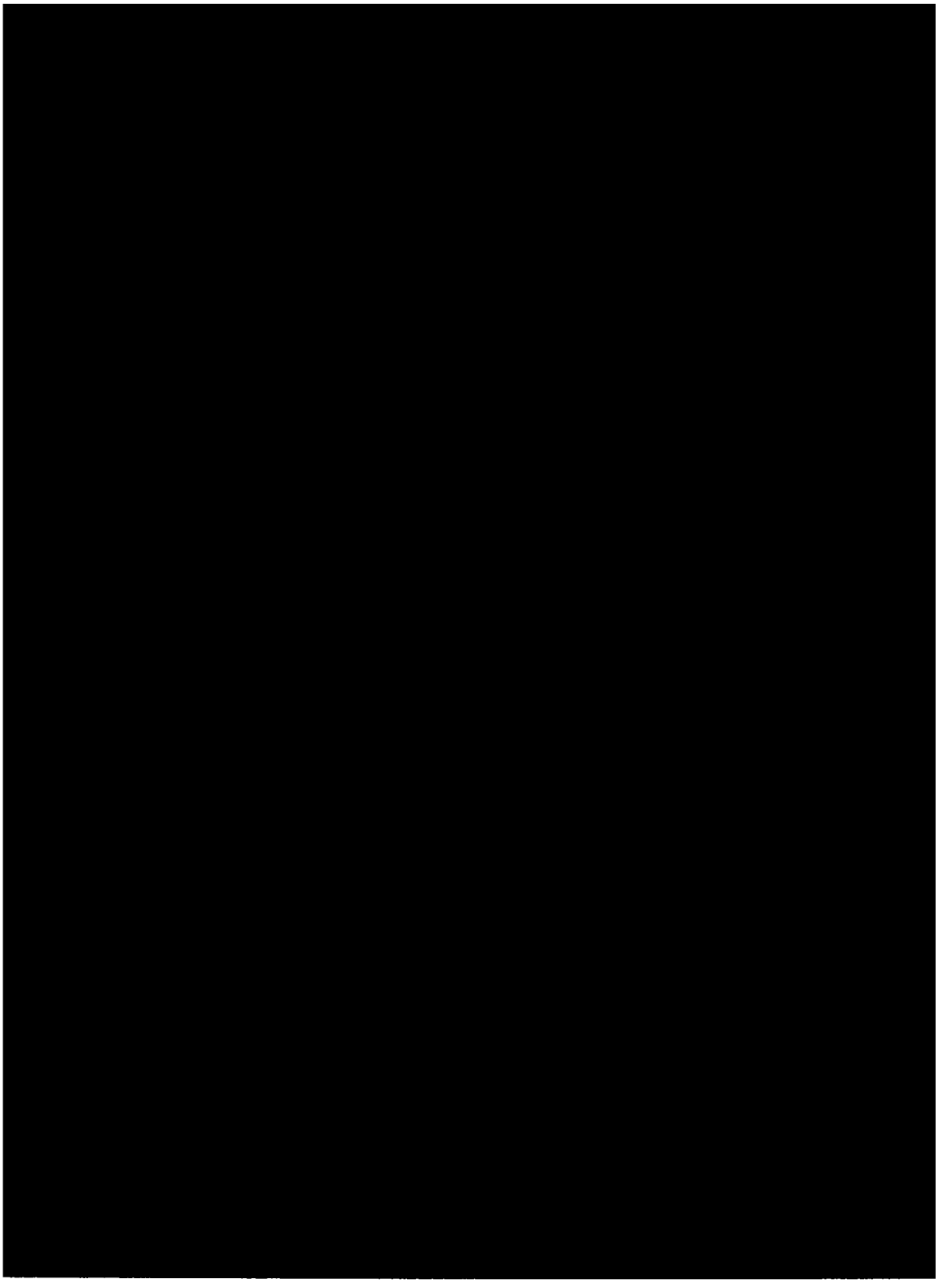

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