

**ACT NO. 10, 1997
ON
NUCLEAR ENERGY**

**STATE GAZETTE OF THE REPUBLIC OF INDONESIA
OF THE YEAR 1997 NUMBER 23**

**STATE GAZETTE OF THE REPUBLIC OF INDONESIA
SUPPLEMENT NUMBER 3676**

**NUCLEAR ENERGY CONTROL BOARD
JAKARTA
1998**

ACT NO. 10, 1997
ON
NUCLEAR ENERGY

BY THE GRACE OF GOD THE ALMIGHTY,
THE PRESIDENT OF THE REPUBLIC OF INDONESIA,

- Considering:
- a. that nuclear energy is related to the life and safety of the people, therefore it must be authorised by the State, and its beneficial use for national development is aimed to the realisation of an equally just and prosperous community, physically and spiritually, based on the Pancasila and the 1945 Constitution;
 - b. that the development and beneficial use of nuclear energy in the various fields of human life in the world have been so advanced that its beneficial use and development for a sustainable and environmentally insighted national development need to be enhanced and expanded to increase the Nation's welfare and competitiveness;
 - c. that for the safety, security, peace, health of workers and the public, and environmental protection, the use of nuclear energy shall be implemented correctly and carefully and is aimed to peaceful purposes and for the utmost benefit for the people's welfare and prosperity;
 - d. that due to the nature of nuclear energy which can not only give advantages but also cause radiation hazards, then every activity that is related to nuclear energy has to be regulated and controlled by the Government;
 - e. that the Act number 3, 1964 on Basic Stipulations of Atomic Energy does not sufficient to the current developed situation;
 - f. that based on considerations as stated in paragraph a, b, c, d, and e of this clause, it is necessary to stipulate an Act on Nuclear Energy.
- Noting:
1. Article 5 clause (1), Article 21 clause (1), and Article 33 of the 1945 Constitution;
 2. Act Number 11, 1967 on Basic Stipulations of Mining (State Gazette of the Republic of Indonesia of the year 1967 number 22, State Gazette of the Republic of Indonesia Supplement number 2831)

With the consent of
THE HOUSE OF THE PEOPLE'S REPRESENTATIVES
OF THE REPUBLIC OF INDONESIA

HAS DECIDED

To enact: **AN ACT ON NUCLEAR ENERGY**

Chapter I

GENERAL PROVISIONS

Article 1

In the context of this Act,

1. **Nuclear activity** is defined as any activity related to the use, the development and the acquisition of nuclear science and technology and the control of any activity related to nuclear energy.
2. **Nuclear energy** is defined as any form of energy released in the process of nuclear transformation, including energy from ionising radiation sources.
3. **Ionising radiation** is defined as electromagnetic radiation or charged particles that due to their energy are capable of ionising the media of their path.
4. **Utilisation** is defined as any activity related to nuclear energy activity that includes research, development, mining, fabrication, manufacturing, production, transportation, storage, transfer, export, import, decommissioning and radioactive waste management to enhance the people's welfare.
5. **Nuclear material** is defined as any material that is capable of producing energy by a self-sustaining chain process of nuclear fission or any material that can be changed into such material that is capable of producing energy by a self-sustaining chain process of nuclear fission.
6. **Nuclear ore** is defined as raw material used for producing nuclear fuel.
7. **Nuclear fuel** is defined as any material that is capable of producing energy by a self-sustaining chain process of nuclear.
8. **Radioactive waste** is defined as any radioactive material and any material as well as equipment that has been contaminated by radioactive material or becomes radioactive due to the operation of a nuclear installation and cannot further be used.
9. **Radioactive material** is defined as any material that emits ionising radiation with a specific activity greater than 70 kBq/kg (2 nCi/g).

10. **Radioactive waste management** is defined as the collection, segregation, process, transportation, storage and/or disposal of radioactive wastes.
11. **Radioisotope** is defined as any isotope that is capable of emitting ionising radiation.
12. **Nuclear installation** is defined as:
 - a. any nuclear reactor;
 - b. any facility for the purification, conversion, enrichment of uranium, fabrication of nuclear fuel and/or reprocessing of spent fuel; and/or
 - c. any facility which is used for storing nuclear fuel and spent fuel.
13. **Nuclear reactor** is defined as any device or installation that is operated using nuclear fuel that is capable of resulting a controlled self-sustaining chain process of nuclear fission and is used to generate power, or for research, and/or for radioisotope production.
14. **Decommissioning** is defined as any activity that is aimed to ultimately terminate the operation of a nuclear reactor, i.e., removal of nuclear fuels from reactor core, dismantling of reactor components, decontamination, and final safety process.
15. **Nuclear incident** is defined as any occurrence or series of occurrences having the same origin that causes nuclear damage.
16. **Nuclear damage** is defined as any loss that can be in the form of loss of life, disablement, personal injury or sickness, or damage to property, contamination and damage to the environment that arises out of radiation or a combination of radiation with toxic, explosive or other hazardous properties as a result of nuclear fuel criticality in a nuclear installation or during transportation, including loss as a result of preventive measures and loss as a result of or measures of reinstatement of impaired environment.
17. **Nuclear installation operator** is defined as any individual person or any legal body that is liable in operating a nuclear installation.
18. **Third party** is defined as any individual person or any legal body that suffers from nuclear damage, not including the Operator of nuclear installation and workers of nuclear installation, who, according to the organisational structure is under the Operator of nuclear installation.

Article 2

- (1) Nuclear materials consist of:
 - a. nuclear material ore;
 - b. nuclear fuel, and
 - c. spent fuel.
- (2) Nuclear materials are authorised by the State and their utilisation are regulated and controlled by the Government.

Chapter II

INSTITUTIONS

Article 3

- (1) The Government establishes an Executing Body, under and directly responsible to the President. The executing Body shall have the task to execute the use of nuclear energy.
- (2) To accomplish the task under clause (1), the Executing Body conducts research and development, general surveys, explorations and exploitations of nuclear ore, raw material production for manufacturing and fabrication of nuclear fuel, production of radioisotopes for research and development, and radioactive waste management.

Article 4

- (1) The Government establishes a Regulatory Body, under and directly responsible to the President. The Regulatory Body shall have the task to control any activity using nuclear energy.
- (2) To accomplish the task under clause (1), the Regulatory Body establishes regulations, conduct licensing processes and inspections.

Article 5

The Government establishes a Nuclear Energy Advisory Council, which shall have functions to give advises and considerations on the use of nuclear energy.

Article 6

The status, main tasks, functions, structure and organisation of the Institutions under Article 3, Article 4, and Article 5 shall be further regulated by Presidential Decrees.

Article 7

The Government may establish a State Company that is related to the commercial utilisation of nuclear energy.

Chapter III

RESEARCH AND DEVELOPMENT

Article 8

- (1) Research and development on nuclear energy should be conducted in order to mastering nuclear science and technology for the purpose of safety, security, peace, and welfare of the people.
- (2) The research and development under clause (1) is accomplished mainly by and is the responsibility of the Executing Body.

- (3) Research and development on nuclear safety need to be notified to reduce negative impacts on the nuclear energy utilisation.
- (4) In order to implement research and development under clause (1), the Executing Body may cooperate with other institutions and bodies.

Chapter IV

ENTERPRISES

Article 9

- (1) General surveys, explorations and exploitations of nuclear material ore shall only be performed by the Executing Body.
- (2) The Executing Body under clause (1) may cooperate with State Company, co-operative, private company, and/or other bodies.

Article 10

- (1) The production and/or procurement of raw materials for manufacturing nuclear fuel shall only be performed by the Executing Body.
- (2) The Executing Body under clause (1) may cooperate with State Company, co-operative, and/or private company.

Article 11

- (1) The non-commercial production of nuclear fuel is performed by the Executing Body.
- (2) The commercial production of nuclear fuel is performed by State Company, co-operative, and/or private company.

Article 12

- (1) The non-commercial production of radioisotopes is performed by the Executing Body.
- (2) The commercial production of radioisotopes is performed by State Company, co-operative, and/or private company.

Article 13

- (1) The non-commercial construction, operation, and decommissioning of nuclear reactor is performed by the Executing Body.
- (2) The Executing Body under clause (1) may cooperate with other government institution and state university.
- (3) The commercial construction, operation, and decommissioning of nuclear reactor shall be performed by State Company, co-operative, and/or private company.

- (4) The commercial construction of nuclear reactor under clause (3), in the form of nuclear power plant, is established by the Government after a consultation with the House of Representative of the Republic of Indonesia.

Chapter V

REGULATORY

Article 14

- (1) The control on the use of any nuclear energy shall be carried out by the Regulatory Body.
- (2) The control under clause (1) should be implemented through regulations, licensing, and inspections.

Article 15

The control under Article 14 is aimed to:

- a. assure the welfare, the security and the peace of people;
- b. assure the safety and the health of workers and public, and the environmental protection;
- c. maintain the legal order in implementing the use of nuclear energy;
- d. increase the legal awareness of nuclear energy user to develop a safety culture in nuclear field;
- e. prevent the diversion of the purpose of the nuclear material utilisation; and
- f. assure for maintaining and increasing the worker discipline on the implementation of nuclear energy utilisation.

Article 16

- (1) Any activity related to the utilisation of nuclear energy shall maintain the safety, the security, the peace, the health of the workers and the public, and the environmental protection.
- (2) The provisions under clause (1) will be further implemented by Government Regulation.

Article 17

- (1) Any use of nuclear energy shall be subjected for licensing, except in certain cases that will be further stipulated by Government Regulation.
- (2) The construction and operation of nuclear reactors and other nuclear installations as well as the decommissioning of nuclear reactor shall be subjected for licensing.
- (3) The requirements and procedures of licensing under clause (1) and clause (2) will be further stipulated by Government Regulation.

Article 18

- (1) Any license pursuant to Article 17 shall be subjected for fee.

- (2) The amount of fee under clause (1) is stipulated by the Decree of the Minister of Finance.

Article 19

- (1) Any employee who operates a nuclear reactor and any special employee in other nuclear installation and in the installations that use ionising radiation sources shall possess a license.
- (2) The requirements to obtain the license under clause (1) will be further stipulated by the Regulatory Body.

Article 20

- (1) The inspection to the nuclear installation and installation that uses ionising radiation shall be performed by the Regulatory Body in order to ensure that the licensing requirements and nuclear safety regulations are complied with.
- (2) The inspection under clause (1) shall be performed by an Inspector who is appointed and dismissed by the Regulatory Body.
- (3) The inspection under clause (1) shall be conducted periodically and at any time.

Article 21

The Regulatory Body provides the guidance and counselling on the implementation of efforts related to the health and safety of workers, and the public, as well as the environmental protection.

Chapter VI

RADIOACTIVE WASTE MANAGEMENT

Article 22

- (1) The radioactive waste management shall be conducted to prevent radiation hazards to workers, the public, and the environment.
- (2) The radioactive waste under clause (1) is classified into low level radioactive waste, intermediate level radioactive waste, and high level radioactive waste.

Article 23

- (1) The radioactive waste management under Article 22 clause (1) shall be performed by the Executing Body.
- (2) In performing radioactive waste management under clause (1), the Executing Body may cooperate with or appoints State Company, co-operative, and/or private company.

Article 24

- (1) Low level and intermediate level radioactive waste generator shall collect, segregate, or treat and temporarily store those wastes before being transferred to the Executing Body, pursuant to Article 23.
- (2) High level radioactive waste generator shall temporarily store those wastes during the period not less than the life time of nuclear reactor.

Article 25

- (1) The Executing Body provides the final repository for high level radioactive wastes.
- (2) The siting of final repository under clause (1) shall be stipulated by the Government after having an approval from the House of Representative of the Republic of Indonesia.

Article 26

- (1) The radioactive wastes storage pursuant to Article 23 clause (1) and Article 25 clause (1), shall be subjected for fee.
- (2) The amount of storage fee under clause (1) will be stipulated by the Decree of the Minister of Finance.

Article 27

- (1) The transportation and storage of radioactive wastes shall consider the safety of workers, public, and environment.
- (2) The provisions on radioactive waste management, including the waste transportation and disposal under clause (1), shall be further implemented by Government Regulation.

Chapter VII

LIABILITY FOR NUCLEAR DAMAGE

Article 28

The nuclear installation operator shall be liable for nuclear damage suffered by the third party that is resulted from any nuclear incident occurs in that nuclear installation.

Article 29

- (1) In the event of nuclear incident occurs during the transportation of nuclear fuel or spent fuel, the nuclear installation consignor shall be liable for the nuclear damage suffered by third party.
- (2) The nuclear installation consignor under clause (1) may transfer the liability to the nuclear installation consignee or the management carrier, if there is a written agreement.

Article 30

- (1) Where the liability of nuclear damage under Article 28 engages more than one nuclear installation operator and it is impossible to exactly determine the part of nuclear damage caused by each of the nuclear installation operator, all of the operator shall be jointly liable
- (2) The liability of each nuclear installation operator under clause (1) shall not exceed the liability of each operator.

Article 31

If in one site there are several nuclear installations, which are managed by one nuclear installation operator, then the operator shall be liable for every nuclear damage caused by every nuclear installation.

Article 32

No liability shall attach to a nuclear installation operator for nuclear damage caused by a nuclear incident directly due to an act of international or non-international armed conflict, or a grave natural disaster exceeding the limit of safety requirement design established by the Regulatory Body

Article 33

- (1) If the nuclear installation operator having paid the compensation under Article 28 is capable of proving that the nuclear damage was resulted from the intent of the third party suffering the damage, then the operator may be relieved wholly or partly from the obligation to pay compensation
- (2) The nuclear installation operator under clause (1) shall have a right of recourse of the liability she paid to the third party who act intentionally.

Article 34

- (1) The maximum limit of liability of the nuclear installation operators shall be Rp 900.000.000.000,00 nine hundred billion rupiahs for each nuclear incident, either in nuclear installation or in transportation of nuclear fuel or spent fuel.
- (2) The limit of liability under clause (1) is established by Presidential Decree.
- (3) The liability pursuant to clause (1) and clause (2) are merely for nuclear damage, not including interest and Court fee.
- (4) The maximum limit of liability under clause (1) may be reconsidered through the Government Regulation.

Article 35

- (1) The nuclear installation operator shall be required to insure this liability to the amount pursuant to Article 34 clause (1) and (2), covered by insurance or other financial security.
- (2) The provision under clause (1) shall also be applicable for the nuclear installation consignee management or the carrier management.

- (3) If there are more than one nuclear installations in one site managed by one nuclear installation operator, the operator shall insure his/her liability for every installation under his/her management.

Article 36

- (1) Should the amount of insurance be reduced due to the compensation for nuclear damage, the nuclear installation operator shall maintain the sum of insurance pursuant to Article 34 clause (1) and (2).
- (2) If the insurance policy is terminated or is void due to other reasons, the nuclear installation operator shall renew his/her insurance policy.
- (3) Where the nuclear installation operator has not renewed the insurance policy pursuant to clause (2) and a subsequent nuclear incident occurs, the nuclear installation operator shall remain liable for the compensation pursuant to Article 34 and 35.

Article 37

- (1) The provisions for insurance coverage under Article 35 shall not be applicable for the government agency that is not a State Company.
- (2) The compensation for nuclear loss under clause (1) will be further stipulated by Presidential Decree.

Article 38

- (1) The insurance company liable for nuclear damage due to a nuclear incident shall pay the compensation within 7 (seven) days after the date of issuance of nuclear incident statement by the Regulatory Body.
- (2) The statement under clause (1) shall be issued within 3 (three) days from the date of nuclear incident.

Article 39

- (1) The right to claim the compensation due to nuclear incident shall be extinguished if such claim is not brought within 30 (thirty) years from the date of the statement issuance by the Regulatory Body, pursuant to Article 38.
- (2) If a nuclear damage caused by a nuclear incident involving nuclear materials that are stolen, lost, or abandoned, then the period established for applying the claim for compensation pursuant to clause (1) shall be accounted from the date of nuclear incident, provided that the period shall not exceed 40 (forty) years since the nuclear materials was theft, lost, or abandoned.
- (3) The right to claim the compensation pursuant to clause (1) and (2) shall be brought within a period of 3 (three) years from the date on which the person suffers the nuclear damage had knowledge or should have had knowledge of the nuclear damage and the nuclear installation operator liable for the damage, provided that the period established pursuant to clause (1) and (2) shall not be exceeded.

Article 40

The Competent Courts of the first instance that have jurisdiction to examine and judge any claims for compensation pursuant to Article 39 are as follows:

- a. the Court of the first instance within the place where the nuclear incident occurred; or
- b. the Court of the first instance in Central Jakarta in the case that the nuclear incident occurred outside the territory of the Republic of Indonesia during the transportation of nuclear fuel or spent fuel.

Chapter VIII

PENAL PROVISIONS

Article 41

- (1) Any person who is constructing, operating, or decommissioning any nuclear reactor without a license pursuant to Article 17 clause (2) shall be punished by limited penal imprisonment for not more than 15 (fifteen) years and by a fine of not more than Rp. 1.000.000.000,00 (one billion rupiahs).
- (2) Any person who commit an act pursuant to clause (1) that cause a nuclear damage shall be punished by imprisonment for life or by limited penal imprisonment for not more than 20 (twenty) years and by a fine of not more than Rp. 1.000.000.000,00 (one billion rupiahs).
- (3) In the case that the person is incapable to pay the fine pursuant to clause (1) and clause (2), the person shall be punished by limited penal imprisonment for not more than 1 (one) year.

Article 42

- (1) Any person who acts contravene with the provisions pursuant to Article 19 clause (1) shall be punished by limited penal imprisonment for not more than 2 (two) years and/or a fine of not more than Rp. 50.000.000,00 (fifty million rupiahs).
- (2) In the case that the person is incapable to pay the fine pursuant to clause (1), the person shall be punished by limited penal imprisonment for not more than 6 (six) months.

Article 43

- (1) Any person who acts contravene to the provisions pursuant to Article 17 clause (1) shall be punished by a fine of not more than Rp. 100.000.000,00 (one hundred million rupiahs).
- (2) In the case that the person is incapable to pay the fine pursuant to clause (1), the person shall be punished by limited penal imprisonment for not more than 1 (one) year.

Article 44

- (1) Any person who acts contravene to the provisions pursuant to Article 24 clause (2) for high level radioactive waste generator shall be punished by limited penal imprisonment for not more than 5 (five) years and by a fine of not more than Rp. 300.000.000,00 (three hundred million rupiahs).
- (2) Any person who acts contravene to the provisions pursuant to Article 24 clause (1) for low and intermediate level radioactive waste generator shall be punished by a fine of not more than Rp. 100.000.000,00 (one hundred million rupiahs).
- (3) In the case that the person is incapable to pay the fine pursuant to clause (2), the person shall be punished by limited penal imprisonment for not more than 1 (one) year.

Chapter IX

TRANSITIONAL PROVISIONS

Article 45

At the date of commencement of this act, all the implementation regulations related to atomic energy shall remain in effect, provided that they do not contradict to this act.

Article 46

The National Atomic Energy Agency and any other institutions shall keep performing their function before new institution based on this act is established.

Chapter X

FINAL PROVISIONS

Article 47

At the date of commencement of this act, the Act Number 31 Year 1964 on Basic Stipulations of Atomic Energy is repealed.

Article 48

This Act shall come into operation on the date of its enactment.
In order that all persons be informed, it is ordered that this Act be published in the State Gazette of the Republic of Indonesia.

Sanctioned in Jakarta
on April 10, 1997
**THE PRESIDENT OF
THE REPUBLIC OF
INDONESIA**

signed

SOEHARTO

Enacted in Jakarta
on April 10, 1997
**THE MINISTER/STATE
SECRETARY
OF THE REPUBLIC OF
INDONESIA**

signed

MOERDIONO

**STATE GAZETTE OF THE REPUBLIC OF INDONESIA
OF THE YEAR 1997 NUMBER 23**

[British English Version. Last Update: Nov 16, 1998]

ELUCIDATION

ON

ACT NUMBER 10, 1997

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NUCLEAR ENERGY

I. GENERAL ELUCIDATION

The purpose of national development is to improve the public welfare, to enhance the intellectual life of the nation, and to increase the quality of Indonesian people in the endeavour to realise an advanced, just, and prosperous society evenly, both physically and spiritually, based on Pancasila and the 1945 Constitution.

Nowadays, in some developed countries, the use of nuclear energy in various fields of human life, such as in research, agriculture, medicine, industries, and energy, has progressed rapidly so that as one of the efforts to participate in the national development and towards the realisation of people's welfare and prosperity as well as achieving the capability to master nuclear technology, then it would be appropriate if the large potency of nuclear energy could be developed and exploited as much as possible for the prosperity of the people. However, besides its large benefit, nuclear energy also has radiation hazard to the workers, the public, and the environment if in the use of nuclear energy, the rules on nuclear safety are neglected and are not controlled appropriately.

The use of nuclear energy in Indonesia has been carried out based on the Act Number 31 Year 1964 on Basic Stipulations of Atomic Energy. Due to the development in times and continuing progress in science and technology in the use of nuclear energy, there are many provisions in this act that have become inappropriate. For example, the authority in executing and controlling the research and utilisation of nuclear energy that falls within one institution so that the function of nuclear energy control has not been optimally achieved. In addition, nuclear materials shall be owned and authorised by the State, whereas the trade of the materials have so far been performed internationally so that the requirement for ownership by the State will impede in the development on the use of nuclear energy. However, the requirement for authorisation by the State shall be maintained. Notwithstanding international free-trading of nuclear material, the government is required to control nuclear material in order to prevent deviation of its use. Therefore, it is necessary to stipulate a new act on nuclear energy to replace the Act Number 31 Year 1964 on Basic Stipulations of Atomic Energy.

In this act, the authority in executing and controlling of nuclear energy are separated into two different institutions to avoid the overlapping of activities on the use and control as well as to optimise the control of nuclear energy in order to improve nuclear safety.

Considering that nuclear energy involves the life and safety of the people, the public role shall be enhanced in the form of an advisory counsel, a non-structural and independent institution consists of experts and public figures that has the task to give advice and considerations on the use of nuclear energy.

To observe the public aspiration on the use of nuclear energy, especially in a construction of a nuclear power plant and in providing a radioactive waste final

repository, the Government shall consult with the House of Representative of the Republic of Indonesia before taking any decision.

The utilisation of nuclear energy shall consider the Principles of National Development, the safety, security, peace, health of workers and the public, the protection of the environment, as well as the utmost utilisation for the public prosperity. It shall mean that the use of nuclear energy for public welfare shall be implemented together with the efforts to prevent the radiation hazard to workers, public, and to the environment.

In this relation, it is necessary to consider other regulations related to the Act on Nuclear Energy, such as Act Number 1 Year 1970 on Work Safety, Act Number 8 Year 1978 on the Ratification of Treaty on the Nuclear Proliferation on Nuclear Weapons, Act Number 4 Year 1982 on Basic Stipulations on Environmental Management, Act Number 5 Year 1984 on Industry, Act Number 15 Year 1985 on Electricity, Act Number 3 Year 1992 on the Insurance for Workers, Act Number 23 Year 1992 on Health, Act Number 24 Year 1992 on Landscape, and Act Number 10 Year 1995 on Customs.

Nuclear energy shall mean any form of energy released from a nuclear transformation process, including energy from ionising radiation sources, for example in the form of X-ray. Therefore, this act shall also be applicable for regulating the use of X-ray machine.

The meaning of the utilisation of nuclear energy is so broad that it includes research, development, mining, manufacturing, production, transportation, storage, transfer, export, import, usage, decommissioning, and radioactive waste management. Considering that the utilisation of nuclear energy can enhance the public welfare in many fields, the public, private industry, or Government should be given as much opportunity as possible to the use of nuclear energy under the legal provisions.

The use of nuclear energy shall be controlled cautiously in order to comply with the regulations in nuclear safety, so that the use of nuclear energy will not cause radiation hazard to workers, the public, and the environment. Environment in this sense means the unity of space with all materials, energy, as well as the condition and living things, including human and their behaviour, which influences the survival and the prosperity of human and other living things. The control is conducted by establishing regulations, licensing, and performing inspections. Operators of nuclear reactor and certain workers of other nuclear installations as well as installations that utilise radiation sources are subjected for licensing.

The enhancement and development of the capability of human resources are the absolute requirements in order to support the efforts to use and to control nuclear energy so that the use of nuclear energy shall unquestionably increase the people's welfare with a high level of safety. The enhancement and development are also performed to increase the discipline in operating nuclear installations and to develop the safety culture.

Radioactive material shall mean any matter that emits ionising radiation with a specific activity of more than 70 kBq/kg or 2 nCi/g (seventy kilobecquerels per kilogram or two nanocuries per gram). The number of 70 kBq/kg (2 nCi/g) is a reference for any substance, which is called radioactive, established by the International Atomic Energy Agency. However, there exist some materials which have specific activity less than the number, but still be considered as radioactive material. This is necessary because it is impossible to determine an absolute limit for all materials due to the different characteristics of materials.

Radioactive wastes, like any other wastes, are any materials that are not further used and due to their radiation properties, the radioactive wastes have a radiation hazard. Because of their properties, radioactive waste management needs to be regulated and controlled to prevent radiation hazards to workers, the public, and to the environment. The radioactive waste management shall be implemented by the Executing Body, where its implementation may be conducted in co-operation with other parties. Based on their hazard level, radioactive wastes are classified into low, intermediate and high level radioactive wastes.

Low and medium level radioactive wastes are collected, segregated, or treated and stored temporarily by the waste generator before they are sent to the Executing Body for further treatment. Since high level radioactive wastes have high level radiation hazard potential, temporary storage of high level radioactive wastes are accomplished by the waste generator, at least during the lifetime of nuclear reactor, while its final repository becomes the responsibility of the Executing Body.

The nuclear enterprises meant in this act shall mean the commercial business activities in general. In this enterprises, besides State Companies, other parties are also be given some opportunities. However, for the Executing Body, the meaning of authority of enterprises shall be a non-commercial and non-profit enterprises.

Nuclear safety technology, nowadays, has been very advanced and reliable and has minimise the probability of nuclear incident so that it can ensure the safety of workers, the public, and the environment. Nevertheless, in order that the nuclear safety regulations are respected and obeyed, it is necessary to stipulate the compensation of the loss due to nuclear incident suffered by third parties and the environment.

Based on the regulatory system in Indonesia, generally the liability is based on fault. It means that a person who is liable shall pay the compensation after there is a proof that a damage has been caused by his/her fault. If the case is applied in a nuclear incident, the suffering party will have a difficulty in proving the fault. The third party, therefore, shall be protected by a strict liability system. The nuclear installation operator is directly liable to the damage without any proof by the third party regarding whether or not there is any fault of the nuclear installation operator, except in case of nuclear incident occurs as a direct result of international or non-international armed conflict or a grave natural disaster exceeding the established limit of safety requirement design.

On the other hand, in the framework of developing and utilising nuclear industry, protection is also needed for the nuclear installation operator as a liable party in the form of limitation of liability, i.e. either in the amount of compensation or in the period of claim.

Considering the need of the third party and the nuclear installation operator, it is necessary to use a special system in liability for nuclear damage that is stipulated in this act. The system not only gives more assured protection to the third party suffering nuclear damage, but also does not impede the development of nuclear industry, as it has been developed in developed countries or developing countries. The main principles in the system are:

- a. strict liability;
- b. no person other than the nuclear installation operator shall be liable for nuclear damage;
- c. the limitation of liability in amount of compensation and time;
- d. the nuclear installation operator shall have the liability coverage in the form of insurance or other financial security.

The scope of liability for nuclear damage caused by nuclear accident in this act is limited only to damage suffered by the third party caused by nuclear incident, in a certain nuclear installation or during the transportation of nuclear fuel or spent fuel, which occurs due to the nuclear fuel criticality. Basically the nuclear installation operator consignor shall be liable for nuclear incident during transportation of nuclear fuel or spent fuel, unless there has been a written agreement. A nuclear installation in this act shall mean:

- a. nuclear reactor;
- b. any facility used for nuclear fuel purification, conversion, enrichment, fabrication and/or spent fuel reprocessing; and/or
- c. any facility used to storage nuclear fuel and spent fuel.

The nuclear fuel criticality is any condition where there is a spontaneous chain reaction of nuclear fuel. The chain reaction results in new neutrons, energy, and radioactive matters. Radioactive matters from the chain reaction in a nuclear incident can cause a nuclear damage. The chain reaction may occur if there is an appropriate combination of mass and dimension of nuclear fuel, in this case the mass and size are specific, which is called critical condition.

Nuclear damage means any damage resulting from the radioactive properties or a combination of radioactive properties with toxic, explosive, or other hazardous properties because of the nuclear fuel criticality.

The third party is any person or body suffering nuclear damage, except the nuclear installation operator and nuclear installation workers that based on organisational structure are under the nuclear installation operator.

The compensation of nuclear damage to the third party in this act is the compensation of damage suffered by the people, such as loss of life, disability, personal injury or sickness, and compensation necessary for the preventive action cost, such as an evacuation done by the competent authority in the location of nuclear installation where the nuclear incident occurred. The compensation to the

damage of property shall conform to value of the damage suffered and its rehabilitation cost. Likewise, the damage compensation to the pollution and environment damage shall conform to the damage and the environmental recovery cost.

The damage not caused by the criticality of nuclear fuel is not included in the category of a nuclear damage. Such workers of a nuclear installation or the worker of an installation using radiation shall be entitled for the compensation according to the Act on Social Insurance of Workers or other Workmen's Compensation Insurance.

This act only stipulates principal matters. Therefore, further regulations shall be stipulated in the implementation regulations.

II. ARTICLE BY ARTICLE ELUCIDATION

Article 1

Sufficiently clear.

Article 2

Paragraph (1)

Spent fuel is nuclear fuel that has been used as fuel in nuclear reactor.
Spent fuel is a high level radioactive waste.

Paragraph (2)

Sufficiently clear.

Article 3

Paragraph (1) and paragraph (2)

The Executing Body mentioned is a government institution under and directly responsible to the President.

Article 4

Paragraph (1) and paragraph (2)

The Regulatory Body mentioned in this act is a government institution under and directly responsible to the President.

Article 5

The Nuclear Energy Advisory Council is an independent and non-structural institution, and its membership consists of experts and public figures. It is established by the Government and has the task to give advice and considerations to the Government.

Article 6

Sufficiently clear.

Article 7

The establishment of State Company is implemented in accordance with the legal provisions.

Article 8

Paragraph (1), paragraph (2), paragraph (3), and paragraph (4)

Basically, the research and development can be conducted, either by the Executing Body or any other bodies. However, the responsibility in research and development of nuclear science and technology is given to the Executing Body. The research and development of nuclear technology, especially in the nuclear safety, including nuclear fuel waste treatment to reduce its negative impacts, needs considerations to achieve a breakthrough in technology. Researches producing technological breakthrough should be provided an award by the Government in accordance with the legal regulations.

Other bodies in this article shall mean any government institutions or private bodies, either national or foreign bodies.

Article 9

Paragraph (1) and paragraph (2)

The Executing Body has an authority for general surveys, non-commercial explorations and exploitations of nuclear ore. In performing the authority, the Executing Body may cooperate with State Companies, co-operatives, private companies, or any other bodies. The form of the co-operation will be further administered by the Government.

Other bodies in this article shall mean any foreign government institutions or foreign private bodies.

Article 10

Paragraph (1) and paragraph (2)

Because nuclear fuel is a strategic material, the production and/or the supply of raw material for nuclear fuel manufacturing is carried out only by the Executing Body. However, the Executing Body may cooperate with State Companies, co-operatives, and any private companies.

Article 11

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Article 12

Paragraph (1)

Sufficiently clear.

Paragraph (2)
Sufficiently clear.

Article 13

Paragraph (1)
Sufficiently clear.

Paragraph (2)
Sufficiently clear.

Paragraph (3)
Sufficiently clear.

Paragraph (4)
The development of nuclear power plant is established by the Government after consultation with the House of Representative of the Republic of Indonesia. The consultations are conducted for each site where one or more nuclear power plants will be built. In this consultation, the Government shall seriously consider the comments and recommendations from the House of Representative of the Republic Indonesia, and the results of consultations shall be respected and become the guidance by the Government and the House of Representative of the Republic of Indonesia.

Article 14

Paragraph (1) and paragraph (2)

The control is necessary to be carried out considering that nuclear energy not only is useful but also has radiation hazards. The purpose of control is to prevent any such radiation hazards from happen.

The control is administered by the following :

- a. Establishing regulations on the nuclear safety field in order to achieve the goal of nuclear energy control.
- b. Carrying-out the licensing to control that the utilisation of nuclear energy is implemented according to the legal provisions. By this licensing, the Regulatory Body is able to know where, by whom, and how the use of nuclear energy is conducted.
- c. Conducting inspections periodically and at any time to ensure that the nuclear energy utilisation is according to the legal provisions.

Article 15

Safety culture is a characteristics and attitudes in organisations and individuals that emphasise the importance of safety. Therefore, the safety culture requires that all the obligations related to safety shall be carried out correctly, accurately, and with a full responsibly.

One of the objective of controls is to prevent the diversion of the purposes of nuclear material utilisation, i.e. the diversion from peaceful purposes.

Article 16

Paragraph (1)

The safety provisions that need to be further regulated among others, are the provision on working safety against radiation, the provision on safe transportation of radioactive material, the provision on safe mining of nuclear ore, and the provision on reactor safety.

Paragraph (2)

Sufficiently clear.

Article 17

Paragraph (1)

Specific cases in this paragraph mean the utilisation of materials, tools, substances, equipment or objects that have radiation level and activity less than radiation and activity limit requiring license, i.e., navigation instruments, watches, gas mantles, and smoke detectors.

Paragraph (2)

The meaning of construction in this paragraph includes siting and construction of nuclear installation itself.

Paragraph (3)

Sufficiently clear.

Article 18

Paragraph (1)

Sufficiently clear.

Paragraph (2)

The Minister of Finance establishes the amount of licensing fees based on recommendations of the Regulatory Body. The income from the licensing fees are deemed Non Tax State Income and shall be deposited to the State Treasury.

Article 19

Paragraph (1)

The status of workers in the operation of a nuclear reactor and the use of radiation source are very important. Due to their role in determining the safety of operation and use of nuclear energy, in obtaining a license, the workers, therefore shall be subjected to a thorough examination to justify their qualifications.

The meaning of special workers shall include Industrial radiographers, industrial radiographer assistants, radiation protection officers, dosimetry officers, and maintenance officers.

Paragraph (2)

Sufficiently clear.

Article 20

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Paragraph (3)

The results of inspection by the Regulatory Body are published periodically and open for public.

Article 21

The counselling and guidance are intended to create motivation and awareness of safety in the use of nuclear energy.

Article 22

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Article 23

Paragraph (1)

Radioactive waste management shall be carried out by the Executing Body based on the safety concern and technical capability of the Executing Body and the facilitation in control implementation. The management is carried out non-commercially.

Paragraph (2)

For commercial activities of radioactive waste management, the Executing Body may designate State Companies, co-operatives, and/or any private company in accordance with the legal provisions.

Article 24

Paragraph (1)

Low and medium level radioactive waste generator shall manage such wastes within the location of the nuclear installation so that they will not endanger to workers, public and the environment, and enable further management by the Executing Body.

The purpose of temporary storage is to reduce the radiation level of short half life radioactive materials before transferring their treatment to the Executing Body.

Paragraph (2)

Sufficiently clear

Article 25

Paragraph (1) and paragraph (2)

The determination of final repository for high level radioactive wastes shall be discussed with the House of Representative of the Republic of Indonesia to obtain an approval since it converts the function of a beneficial site to a site that can never be used for anything else. The radioactive wastes from other countries shall not be allowed to be stored in the territory of the Republic of Indonesia.

Article 26

Paragraph (1)

Sufficiently clear.

Paragraph (2)

The Minister of Finance shall govern the amount of the storage fees based on the Executing Body recommendations. The income from disposal fees of the Executing Body are deemed Non Tax State Incomes and shall be deposited to the State Treasury.

Article 27

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Article 28

Basically in case of nuclear incident, the liability shall be burdened to one party only, i.e. the nuclear installation operator. Therefore, there are no other persons except the nuclear installation operator that shall be liable.

In the strict liability, to receive the compensation, the third party suffering from nuclear damage shall not be obliged to provide proof whether the nuclear installation operator has made any mistake or not. To avoid the compensation being paid to person or persons having no such right, the third party shall show only legal evidence(s) of the damage originated from the nuclear incident.

Article 29

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Article 30

Paragraph (1)

"All of the operator shall be jointly liable" shall mean if one of the nuclear installation operator has fulfilled the obligations and other operators shall then be free from such obligation. The operator fulfilling the obligation

shall calculate the amount of due liability which shall be burdened by other operators proportional to the type of the nuclear installations and their hazard level. Therefore, the liability that shall be burdened by each operator shall not exceed the amount stipulated in Article 34.

Paragraph (2)

If nuclear damage exceeds the amount of the nuclear installation operator liability, the Government shall take any necessary steps to resolve the case.

Article 31

Sufficiently clear.

Article 32

Conflict or International armed conflict shall mean a conflict or an armed conflict involving other countries.

Non-international armed conflict or armed conflict shall mean among others rebellions and security disturbances movement.

A grave natural disaster is, for example, the types of earthquake which have category levels exceeding S_1 (seismic category 1) and S_2 (seismic category 2).

S_1 and S_2 are the classification of earthquakes stipulated by the Regulatory Body. S_1 is a maximum earthquake that may occur once in the nuclear installation life time, while S_2 is a maximum earthquake that may happen in a nuclear installation of more than nuclear installation life time. S_1 and S_2 are determined based on the maximum earthquake that was happen during a certain time cycle at the site of the nuclear installation, for example 50 (fifty)-year-period for S_1 (equivalent to nuclear installation life time) and 1,000 (one thousand)-year-period for S_2 . A nuclear installation shall be so designed to withstand at the S_1 and S_2 levels.

Article 33

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Article 34

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Paragraph (3)

To avoid any short payment of compensation to the third party, interest and cost the court fee shall not be included in the liability amount.

Paragraph (4)

The purpose of reconsideration to the amount of the operator liability is to adjust it according to the current exchange rate.

Article 35

Paragraph (1)

Sufficiently clear.

Paragraph (2)

The nuclear installation operator shall mean the operator under Article 29

Paragraph (3)

Sufficiently clear.

Article 36

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Paragraph (3)

The provision provides more assured protection to the party suffering the damage.

Article 37

Paragraph (1)

The exemption of Government from taking any liability coverage by means of insurance or other financial security does not mean that the Government shall not give any compensation to the third party suffering the damage in case of a nuclear incident, because the Government in principle has the task to protect the public.

Paragraph (2)

Sufficiently clear.

Article 38

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Article 39

Paragraph (1)

The provision on the time period is to give a legal certainty to the parties.

Paragraph (2)

Sufficiently clear.

Paragraph (3)
Sufficiently clear.

Article 40
Sufficiently clear.

Article 41
Paragraph (1)
Sufficiently clear.

Paragraph (2)
Sufficiently clear.

Paragraph (3)
Sufficiently clear.

Article 42
Paragraph (1)
Sufficiently clear.

Paragraph (2)
Sufficiently clear.

Article 43
Paragraph (1)
Sufficiently clear.

Paragraph (2)
Sufficiently clear.

Article 44
Paragraph (1)
Sufficiently clear.

Paragraph (2)
Sufficiently clear.

Paragraph (3)
Sufficiently clear.

Article 45
Sufficiently clear.

Article 46
Sufficiently clear.

Article 47
Sufficiently clear.

Article 48

Sufficiently clear.

**STATE GAZETTE OF THE REPUBLIC OF INDONESIA
SUPPLEMENT NUMBER 3676**