PRESIDEN
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GOVERNMENT REGULATIONS OF THE REPUBLIC OF INDONESIA

NUMBER 33 OF 2007

ABOUT

SAFETY AND IONIZING RADIATION

SAFETY OF RADIOACTIVE SOURCES

BY THE GRACE OF GOD ALMIGHTY

PRESIDENT OF THE REPUBLIC OF INDONESIA,

Considering: **a. that Government Regulation Number 63 of 2000 concerning Safety and Health on the Use of Radiation Ionization as an implementation of the provisions of Article 16 of the Law Law Number 10 of 1997 concerning Nuclear Energy, yes no longer in line with developments in science and technology Current technology is increasingly demanding guaranteeing the safety of workers, the community and protection to the environment and safety of radioactive sources, so it needs to be replaced with new regulations;**

b. that based on the considerations as intended in letter a needs to stipulate government regulations regarding Ionizing Radiation Safety and Radioactive Source Security;

Remember : **1. Article 5 paragraph (2) of the Constitution of the Republic Indonesia in 1945;**

2. Law Number 10 of 1997 about Nuclear Energy (State Gazette of the Republic of Indonesia Year 1997 Number 23, Supplement to the State Gazette of the Republic of Indonesia Number 3676);

DECIDE :

Establish: GOVERNMENT REGULATIONS CONCERNING SAFETY IONIZING RADIATION AND RADIOACTIVE SOURCE SAFETY.

PIG
GENERAL REQUIREMENTS

article 1

In this Government Regulation what is meant by:

1. **Ionizing Radiation Safety hereinafter referred to as Radiation Safety is an action taken to protect workers, community members and the environment live from the dangers of radiation.**
2. **Radioactive Source Security is the action taken to prevent unauthorized access or tampering, and loss, theft, and/or unauthorized transfer of Source Radioactive.**
3. **Radiation Protection is an action taken to reduce the damaging effects of radiation due to exposure radiation.**
4. **Utilization is an activity related to energy nuclear which includes research, development, mining, manufacture, production, transportation, storage, transfer, export, import, use, decommissioning, and management of radioactive waste to improve people's welfare.**
5. **Nuclear Energy is energy in any form released in the process of core transformation including energy originating from sources of ionizing radiation.**
6. **Ionizing Radiation, hereinafter referred to as Radiation, is electromagnetic waves and charged particles because the energy it has is able to ionize the medium that he went through.**

7. Radiation Sources, hereinafter referred to as Sources, are everything something that can cause radiation exposure, including substances radioactive and equipment containing radioactive substances or producing radiation, and facilities or installations in it It contains radioactive substances or equipment produce radiation.
8. Radioactive sources are radioactive substances in solid form permanently encased in a tightly bound capsule.
9. Safety culture is a combination of organizational attitudes and individuals within the organization who provide care and top priority on Radiation Safety issues.
10. Radiation exposure is radiation exposure received by human or material origin, whether intentional or not from internal and external radiation.
11. Normal exposure is exposure that is expected to occur accepted under normal operating conditions of a facility or installation, including minor accidents that may occur controlled.
12. Potential Exposure is exposure that is not expected or expected but has possible consequences accident Source or due to an event or series Possible events include equipment failure or operational errors.
13. Occupational Exposure is exposure received by workers radiation.
14. Medical Exposure is exposure received by the patient as part of medical diagnosis or treatment, and other people as volunteers who help patients.
15. Public Exposure is exposure originating from Sources Radiation received by members of society, incl exposure originating from sources and uses that have been made obtaining permission and Intervention situations, but not included

Occupational Exposure or Medical Exposure, and Local Background Radiation which is normal.

16. **Emergency Exposure is exposure that results from an occurrence nuclear or radiological emergency conditions.**
17. **Intervention is any action to reduce or avoid exposure or the possibility of exposure chronic and Emergency Exposure.**
18. **Intervention Level is the dose level that can be avoided by taking protective or remedial action to chronic exposure situations or Emergency Exposure.**
19. ***Naturally Occurring Radioactive Material* is next abbreviated NORM is a naturally radioactive substance found in nature.**
20. ***Technologically Enhanced Naturally Occurring Radioactive Material* hereinafter abbreviated as TENORM is a natural radioactive substance caused by human activities or technological processes there is an increase in Potential Exposure when compared with the initial state.**
21. **Radiation Dosage, hereinafter referred to as Dose, is the amount Radiation contained in a Radiation field or amount of energy Radiation that is absorbed or received by the material in its path.**
22. **Records are documents that state the results achieved or provide proof of implementation of activities in Utilization Nuclear Power.**
23. **Dose Limit Value is the largest dose permitted by BAPETEN which can be accepted by radiation workers and members of society within a certain period of time without causes genetic and somatic effects which mean consequences Utilization of Nuclear Energy.**
24. **Nuclear Energy Regulatory Agency, hereinafter referred to BAPETEN is the agency tasked with implementing it supervision through licensing regulations and inspections**

regarding all Nuclear Energy Utilization activities.

25. Radiation Protection Officer is an officer appointed by License holder and BAPETEN declared capable carrying out work related to Protection Radiation.

26. Radiation Workers are anyone who works in an installation nuclear or anticipated Ionizing Radiation installations receiving an annual dose exceeding the dose for the community general.

27. Inspection is one element of Utilization supervision Nuclear Power carried out by Safety Inspectors Nuclear to ensure compliance with statutory regulations nuclear power invitation.

28. Nuclear Safety Inspector is a BAPETEN employee authorized by the Head of BAPETEN to carry out Inspection.

29. Permit Holder is the person or entity who has received it Nuclear Energy Utilization permit from BAPETEN.

30. Quality Assurance Program in the Utilization of Nuclear Energy hereinafter referred to as the Quality Assurance Program is systematic and planned actions to ensure achieving Radiation Safety goals.

CHAPTER II
SCOPE AND OBJECTIVES

Section 2

(1) This Government Regulation regulates Radiation Safety towards workers, society and the environment, Safety of Radioactive Sources, and inspections in Utilization Nuclear Power.

(2) Radiation Safety as intended in paragraph (1) includes the Use of Nuclear Energy and Intervention.

(3) Security of Radioactive Sources as referred to in paragraph (1) does not cover the security of nuclear materials.

(4) Security of nuclear materials as intended in paragraph (3) regulated in a separate Government Regulation.

Article 3

This government regulation aims to ensure worker safety and members of society, protection of the environment, and Radioactive Source Safety.

CHAPTER III

INTERNAL RADIATION SAFETY UTILIZATION OF NUCLEAR POWER

Part One
General

Article 4

(1) Every person or entity that will utilize Energy Nuclear is required to have a Nuclear Energy Utilization permit and meets Radiation Safety requirements.

(2) Licensing for the Utilization of Nuclear Energy as intended in paragraph (1) is regulated in a separate Government Regulation.

(3) Radiation Safety Requirements as referred to in paragraph (1) includes:

a. management requirements;

b. Radiation Protection requirements;

c. engineering requirements; And

d. safety verification.

(4) Fulfillment of the requirements as referred to in paragraph (3) must be documented in the Guarantee Program Quality.

(5) Further provisions regarding the preparation of the Guarantee Program Quality for the use of nuclear energy is regulated by regulations Head of BAPETEN.

The second part
Management Requirements

Article 5

Management requirements as intended in Article 4 paragraph (3) letter a includes:

a. person in charge of Radiation Safety;

b. Safety Culture;

c. health monitoring;

d. personnel;

e. education and training; And

f. Recording.

Article 6

(1) Person in charge of Radiation Safety as follows referred to in Article 5 letter a consists of:

a. Permit Holder; And

b. other parties related to the implementation of Utilization Nuclear Power.

(2) Permit holders as referred to in paragraph (1) letter a responsible for:

a. realizing the goals of Radiation Safety as follows stipulated in this Government Regulation;

b. compose, develop, implement, and document the Protection and Safety program Radiation, which is made based on the nature and risk for every implementation of Nuclear Energy Utilization;

c. form and appoint a Safety Manager Radiation within the facility or installation is appropriate to the task and responsibilities;

d. determine actions and resources necessary to achieve the objectives as intended in letter a, and ensure that these resources

adequate and the actions taken can be implemented correctly;

e. review every action and resource thoroughly periodically and continuously to ensure goals as intended in letter a can be achieved;

f. identify any failures and weaknesses within actions and resources required for realizing Radiation Safety, as well as taking corrective and preventive measures against recurrence these circumstances;

g. create procedures to facilitate consultations and cooperation between all parties involved Radiation Safety; And

h. create and maintain Records related to Radiation Safety.

(3) Responsibility of other parties as intended in paragraph (1) letter b is based on their respective duties and roles in Radiation Safety.

(4) Permit Holders, in carrying out their responsibilities as intended in paragraph (2) can delegate to or designate personnel on duty at the facility or its installation to perform the necessary actions in realizing Radiation Safety.

(5) Delegation or appointment as referred to in paragraph (4) does not exempt the License Holder from legal liability if a situation occurs that can endanger the safety of workers, members of the public, and environment.

(6) Further provisions regarding internal responsibilities Radiation Safety is regulated by Head Regulations BAPETEN.

Article 7

(1) Person in charge of Radiation Safety as intended in Article 6 paragraph (1) it is mandatory to create a Safety Culture as intended in Article 5 letter b in each Utilization of Nuclear Energy by:

a. create standard operating procedures and policies put Radiation Protection and Safety on highest priority;

b. identify and correct factors that affects Radiation Protection and Safety accordingly with the level of potential danger;

c. clearly identify the responsibilities of each personnel for radiation protection and safety;

d. establish clear authority for each personnel in every implementation of Protection and Radiation Safety;

e. build a good communication network throughout organizational levels, to generate information flows appropriate information regarding Radiation Protection and Safety; And

f. establish adequate qualifications and training for every personnel.

(2) Further provisions regarding the application of Culture Safety is regulated by BAPETEN Chairman's Regulations.

Article 8

(1) Permit holders are required to carry out health monitoring as intended in Article 5 letter c for all Radiation Worker.

(2) Permit Holders, in carrying out monitoring health as intended in paragraph (1), must:

a. carry it out based on general health provisions

Work;

b. designing an assessment of the suitability of the placement workers in carrying out assigned work to him; And

c. use monitoring results as a basis information on:

1. cases of occupational disease appearing after occurrence of excessive radiation exposure;

2. when providing certain counseling for workers regarding the dangers of radiation that may be obtained; And

3. health management of affected workers Excessive radiation exposure.

(3) Health monitoring as intended in paragraph (1) implemented through:

a. medical examination;

b. counseling; and/or

c. health management of workers who receive it Excessive radiation exposure.

(4) The License Holder must store and maintain the results monitoring workers' health as referred to in paragraph (3) within a period of 30 (thirty) years from the date of dismissal of the employee concerned.

Article 9

Permit holders are required to carry out worker health checks as intended in Article 8 paragraph (3) letter a, when:

a. before work;

b. during work; And

c. will terminate the employment relationship.

Article 10

Health examination as intended in Article 9
carried out by a doctor who has the appointed competence
by the License Holder, and approved by the competent authority in the field
employment.

Article 11

(1) Health examination for workers as intended
in Article 9 letter b must be carried out periodically at most
very little in 1 (one) year.
(2) Health examination as intended in paragraph (1)
adapted to the type of work performed.
(3) If deemed necessary, special inspections can be carried out
towards certain workers.

Article 12

Permit holders are required to provide counseling as follows
referred to in Article 8 paragraph (3) letter b to provide
complete consultation and information regarding the dangers of radiation
to workers.

Article 13

Permit holders are obliged to carry out management of workers who
get excessive radiation exposure as intended
in Article 8 paragraph (3) letter c, through a health examination and
follow up, counseling, and review of the dose received.

Article 14

The Permit Holder is responsible for covering monitoring costs
health as intended in Article 8.

Article 15

Further provisions regarding health monitoring as intended in Article 8 is regulated by Regulation Head of BAPETEN.

Article 16

(1) Permit holders are required to provide personnel as required referred to in Article 5 letter d who has the qualifications and competency according to the type of Nuclear Energy Utilization.

(2) Personnel as referred to in paragraph (1) are at least consist of:

a. Radiation Protection Officer;

b. Radiation Worker;

c. experts;

d. operator; and/or

e. medical or paramedic personnel.

(3) Further provisions regarding qualifications and competencies personnel are regulated by BAPETEN Chairman's Regulations.

Article 17

(1) License holders are required to improve the capabilities of their personnel work at a facility or installation through education and training as intended in Article 5 letter e for foster adequate understanding of:

a. responsibility in Radiation Protection and Safety; And

b. the importance of implementing Radiation Protection and Safety while carrying out work related to Radiation.

(2) Education and training as intended in paragraph (1) must at least be adjusted to:

a. potential Occupational Exposure;

b. the level of supervision required;

c. the complexity of the work to be carried out; And

d. the level of training that personnel have undergone as intended in Article 16.

(3) Further provisions regarding education and training regulated by BAPETEN Chairman's Regulations.

Article 18

(1) Permit holders are required to create, maintain and store Records as intended in Article 5 letter f.

(2) Records as intended in paragraph (1) include Quality records and technical records.

(3) The recording as intended in paragraph (2) must be shown when BAPETEN carries out an Inspection.

Article 19

(1) Permit holders are required to make Radiation Exposure Records resulting in a dose exceeding the Limit Value Dosage and report immediately orally to BAPETEN.

(2) The License Holder is obliged to submit a written report regarding the occurrence of Radiation Exposure that exceeds the Dose Limit Value as intended in paragraph (1) to BAPETEN at most no later than 3 (three) working days from receipt verbal notification.

Article 20

Further provisions regarding recordings are regulated by regulations Head of BAPETEN.

Part Three
Radiation Protection Requirements

Article 21

Permit holders to utilize Nuclear Energy, are obliged to fulfill the Radiation Protection requirements as intended in Article 4 paragraph (3) letter b, which includes:

a. justification for the use of nuclear energy;

b. Dose limitation; And

c. Optimizing Radiation Protection and Safety.

Article 22

(1) Permit Holder, in carrying out Energy Utilization Nuclear, must comply with the principle of justification for the use of energy Nuclear as intended in Article 21 letter a.

(2) Justification of the Utilization of Nuclear Energy as intended in paragraph (1) must be based on the benefits obtained greater than the risks posed.

(3) Further provisions regarding justification are regulated by BAPETEN Head Regulations.

Article 23

(1) Dose Limitation as intended in Article 21 letter b must be applied for Occupational Exposure and Exposure Society through the application of Dose Limit Values.

(2) There is no dose limitation as intended in paragraph (1). applies to :

a. Medical Exposure; And

b. exposure that comes from nature.

(3) Dose Limit Value as intended in paragraph (1) determined by BAPETEN and may not be exceeded, except under special conditions.

(4) Further provisions regarding dose limitations are regulated by

BAPETEN Head Regulations.

Article 24

Permit Holder, to ensure the Dosage Limit Value for workers and the community is not exceeded, is obliged to do:

a. division of work areas;

b. monitoring Radiation Exposure and/or radioactive contamination in the work area;

c. environmental radioactivity monitoring outside the facility or installation; And

d. monitoring the dose received by workers.

Article 25

(1) Division of work areas as intended in Article 24 letter a must be based on the level of Radiation and/or radioactive contamination.

(2) Division of work areas as intended in paragraph (1) must be stated clearly in the Protection Program Radiation that applies to the Permit Holder's facilities or installations.

(3) Further provisions regarding the division of work areas are regulated with the Regulations of the Head of BAPETEN.

Article 26

Permit holders are required to carry out monitoring of Radiation Exposure and/or radioactive contamination in the work area as follows referred to in Article 24 letter b continuously, periodically and/or at any time according to the type of Source used.

Article 27

(1) License holders are required to carry out radioactivity monitoring environment as intended in Article 24 letter c

continuously, periodically, and/or at any time.

(2) The level of environmental radioactivity must not exceed the value environmental radioactivity limits determined by BAPETEN.

(3) Further provisions regarding radioactivity limit values The environment is further regulated by Head Regulations BAPETEN.

Article 28

(1) Permit holders can immediately release radioactive substances originating from the facility or installation into the environment, if applicable reach client level.

(2) Further provisions regarding client levels are regulated by BAPETEN Head Regulations.

Article 29

(1) Permit holders are required to monitor worker doses as intended in Article 24 letter d.

(2) Results of worker dose monitoring as referred to in paragraph (1) must be evaluated by a dosimetry laboratory accredited.

(3) Results of monitoring evaluation of doses received by workers as intended in paragraph (2) must be submitted by dosimetry laboratory to the License Holder and BAPETEN.

(4) The Permit Holder is obliged to notify the worker regarding the results of the Dosage monitoring evaluation as follows referred to in paragraph (3).

(5) The results of monitoring the dose received by the worker must be stored and maintained by the License Holder for a minimum of 30 years (thirty) years from the date of employment in question stop working.

(6) In terms of the results of monitoring the dose received by the worker

as intended in paragraph (3) shows the dosage significant or exceeds the Dose Limit Value, the License Holder is obliged carry out follow-up.

(7) BAPETEN can search for information if there are results evaluation shows the Dose exceeds the Dosage Limit Value.

Article 30

In the event that there is no such dosimetry laboratory referred to in Article 29 paragraph (2) which is accredited by the Committee National Accreditation, BAPETEN can appoint laboratories Dosimetry is considered capable of evaluating results monitoring the dose received by workers.

Article 31

(1) Permit Holder, in carrying out the obligations as stated as intended in Article 24, is obliged to provide equipment Radiation Protection.

(2) Radiation Protection Equipment as referred to in paragraph (1) includes:

a. Radiation and/or contamination level monitoring equipment radioactive in the work area;

b. individual Dose monitoring equipment;

c. environmental radioactivity monitoring equipment; and/or

d. Radiation protective equipment.

(3) Radiation Protection Equipment as referred to in paragraph (2) must function properly according to the type Sources and energy used.

(4) Further provisions regarding Radiation Protection equipment regulated by BAPETEN Chairman's Regulations.

Article 32

Every worker, patient, patient companion, and/or other person those dealing with radiation must wear a dose monitor individuals and Radiation protective equipment as intended in Article 31 paragraph (2) letters b and d.

Article 33

(1) Permit holders are required to calibrate:

a. Radiation Protection equipment as intended in Article 31 paragraph (2) letters a, b, c; And

b. radiotherapy equipment.

(2) Calibration of equipment as intended in paragraph (1) letter b includes:

a. teletherapy output;

b. brachytherapy activities;

c. Open source activities; And

d. Radiation therapy measuring instrument.

(3) Calibration as intended in paragraph (1) is carried out periodically and/or at any time.

(4) Calibration as intended in paragraph (1) is carried out by accredited calibration laboratory.

(5) Further provisions regarding calibration are regulated by BAPETEN Head Regulations.

Article 34

(1) Optimization of Radiation Protection and Safety as follows as intended in Article 21 letter c, efforts must be made to ensure that The size of the dose received is as low as possible achieved by considering social and economic factors.

(2) The amount of dose as intended in paragraph (1) must be below the Dosage Limit Value.

Article 35

Implementation of optimization as intended in Article 34 implemented through:

a. Dose limiter; And

b. Guideline Levels for Medical Exposure.

Article 36

(1) Dose Limiter as intended in Article 35 letter a determined by the License Holder after obtaining approval from the Head of BAPETEN.

(2) Determination of dose limits as referred to in paragraph (1) must not exceed the Dosage Limit Value.

(3) In the event that there is more than one facility or installation in one area, the Dosage limit must be determined by consider the dose contribution of each facilities or installations.

(4) In the event that personnel work in more than one facility or installation, Dose limiter as intended in paragraph (3) is mandatory enforced.

Article 37

(1) Guidance Level as intended in Article 35 letter b is only intended for Medical Exposure in radiology diagnostic and interventional, and nuclear medicine.

(2) Guide Level for Medical Exposure as intended in paragraph (1) is not intended for internal medical exposure radiotherapy.

Article 38

(1) Guide Level for Medical Exposure as intended in Article 37 paragraph (1) is determined by the Head of BAPETEN based on applicable Indonesian National Standards.

(2) In the event that the Indonesian National Standard is not yet available, BAPETEN may set Guide Levels based on international standards.

Article 39

(1) Medical practitioners are required to use the Guide Level for Medical Exposure as intended in Article 37 on when carrying out diagnostic radiology procedures and interventional, and nuclear medicine to optimize protection for patients.

(2) Medical practitioners based on appropriate clinical assessment can provide exposure that is inconsistent with the Level Guidelines for Medical Exposure as referred to in Article 37.

(3) Guideline Levels for Medical Exposure may be updated accordingly with developments in science and technology related to Radiation Protection and Safety.

Article 40

(1) To ensure that the Guide Levels for Exposure Medical as intended in Article 37 to Article 39 is complied with, a conformity test must be carried out on X-ray aircraft for diagnostic and interventional radiology.

(2) The conformity test as intended in paragraph (1) must be carried out by qualified examiners.

(3) Test results carried out by the examiner must be qualified as intended in paragraph (2). evaluated by experts to determine reliability X-ray aircraft.

(4) The conformity test as intended in paragraph (1) is based on operating and safety parameters.

(5) Further provisions regarding suitability tests are regulated by

BAPETEN Head Regulations.

Part Four
Engineering Requirements

Article 41

(1) License Holders, in utilizing Nuclear Energy in accordance with the magnitude of the potential danger. The source used is mandatory fulfill the technical requirements as referred to in Article 4 paragraph (3) letter c.

(2) Technical requirements as intended in paragraph (1) includes:

a. layered defense system; And

b. proven engineering practices.

Article 42

(1) Layered defense system as intended in Article 41 paragraph (2) letter a must be applied in designing the system safety.

(2) Further provisions regarding layered defense systems for each type of Source used in Utilization Nuclear Energy is regulated by BAPETEN Chairman's Regulations.

Article 43

(1) Tested engineering practices as referred to in Article 41 paragraph (2) letter b must be applied to the Source according to the potential danger.

(2) Permit Holders, in implementing proven engineering practices as intended in paragraph (1), must:

a. consider requirements, standards and instruments other documents that have been determined;

b. get support from reliable management to guarantees Radiation Protection and Safety during

Sources used;

c. include adequate safety tolerances
to the design, construction and operation of Sumber; And

d. consider developments in technical criteria
relevant, research results regarding Protection and
Relevant Radiation Safety, and lessons learned
gained from experience.

(3) Further provisions regarding engineering practices
tested for each type of regulated Nuclear Energy Utilization
with the regulations of the Head of BAPETEN.

Part Five
Safety Verification

Article 44

(1) The License Holder, to ensure the safety of the Source, is obliged to
carry out safety verification as intended
in Article 4 paragraph (3) letter d.

(2) Safety verification as intended in paragraph (1)
includes:
a. Source safety assessment;
b. monitoring and measuring safety parameters; and
c. Recording of safety verification results.

Article 45

(1) Permit Holder, starting from the site determination, design,
manufacture, construction, installation, commissioning, operation,
maintenance, and/or decommissioning, is mandatory
Source safety assessment as referred to in
Article 44 paragraph (2) letter a.

(2) Source safety assessment as referred to in
paragraph (1) is implemented to:
a. identify the occurrence of Normal Exposure and Exposure

Potential;

b. determine Normal Exposure levels and estimate likelihood and level of Potential Exposure; and/or

c. assess the quality and reliability of Protection equipment and Radiation Safety.

(3) Further provisions regarding safety assessments Sources are regulated by BAPETEN Chairman's Regulations.

Article 46

(1) Permit holders are required to carry out monitoring and measurement of safety parameters as intended in Article 44 paragraph (2) letter b.

(2) Permit Holders, in carrying out monitoring and measurement of safety parameters as intended in paragraph (1), it is mandatory to provide appropriate equipment and procedures adequate.

(3) The equipment as intended in paragraph (2) must:

a. properly maintained and tested;

b. calibrated by an accredited calibration laboratory.

(4) Further provisions regarding monitoring and measurement Safety parameters are regulated by Head Regulations BAPETEN.

Article 47

(1) Permit holders are required to create, maintain and store Recording of safety verification results as intended in Article 44 paragraph (2) letter c.

(2) Records of safety verification results may form part from technical records as intended in Article 18 paragraph (2).

(3) Further provisions regarding the recording of verification results Safety is regulated by BAPETEN Chairman's Regulations.

CHAPTER IV

INTERVENTION

Part One
General

Article 48

(1) Interventions applied in situations include:

a. chronic exposure; And

b. Emergency Exposure.

(2) Chronic exposure situation as intended in paragraph (1)
letter a includes:

a. exposure derived from NORM;

b. TENORM-derived exposure;

c. exposure originating from residual radioactive substances at the incident
the past; And

d. exposure originating from an unknown Source
the owner.

(3) Emergency Exposure Situations as intended in paragraph (1)
letter b only covers accident conditions.

Article 49

(1) Intervention in chronic exposure situations as follows
as intended in Article 48 paragraph (1) letter a is implemented through remedial action.

(2) Intervention in Emergency Exposure situations as follows
as intended in Article 48 paragraph (1) letter b is implemented through protective and remedial action.

(3) Further provisions regarding exposure interventions
chronicle as intended in paragraph (1) is regulated by
BAPETEN Head Regulations.

The second part
Implementation of Intervention

Article 50

(1) Every person or entity which, because of its activities, is able to produces by-product minerals in the form of TENORM must carry out interventions in the event of exposure originating from TENORM through remedial action as referred to in Article 49 paragraph (1).

(2) Implementation of interventions as intended in paragraph (1) reported to BAPETEN.

(3) BAPETEN evaluates the implementation of the intervention as follows referred to in paragraph (2).

Article 51

BAPETEN is obliged to implement interventions for chronic exposure except TENORM through remedial action as referred to in Article 49 paragraph (1).

Article 52

Implementation of interventions as intended in Article 50 and Article 51 only applies to TENORM and NORM with radioactive concentration exceeds the Intervention Level.

Article 53

(1) The License Holder is obliged to carry out intervention against occurrence of Emergency Exposure originating from the facility or installations for which he is responsible through action protective and remedial as intended in Article 49 paragraph (2) based on the Situation Management Plan Emergency.

(2) Emergency Management Plan as follows as intended in paragraph (1) must be prepared by the License Holder

in accordance with the potential danger of radiation contained in Sources and impacts of accidents.

(3) The impact of the accident as intended in paragraph (2) includes impacts:

a. within the site; and/or

b. outside the site.

Article 54

(1) Permit holders are obliged to carry out countermeasures against emergencies that impact within the site.

(2) In the event of an emergency with widespread impact until leaving the site, the Permit Holder is obliged to report to BAPETEN.

(3) BAPETEN follows up on the report as intended in paragraph (2) by coordinating with the relevant agencies authorized.

Article 55

Emergency Management Plan as intended Article 53 paragraph (1) contains at least:

a. coping function; And

b. infrastructure.

Article 56

The countermeasure function as intended in Article 55 letter a consists of at least:

a. identification, reporting, and activation;

b. mitigation measures;

c. immediate protective measures;

d. protective measures for radiation workers and the public; and/or

e. information and instructions to the public.

Article 57

Infrastructure as intended in Article 55 letter b at most a few include:

a. organization;

b. coordination;

c. facilities and equipment;

d. mitigation procedures; and/or

e. training program.

Article 58

Further provisions regarding situation management plans emergency as intended in Article 55 is regulated by BAPETEN Head Regulations.

Article 59

(1) Intervention as intended in Article 50, Article 51, and Article 53 is implemented until it reaches a value below Level Intervention.

(2) Provisions regarding Intervention Levels are regulated by BAPETEN Head Regulations.

CHAPTER V

SAFETY OF RADIOACTIVE SOURCES

Part One
General

Article 60

(1) Permit holders who import, export, use, storing, and/or transporting Radioactive Sources is mandatory implement Radioactive Source Security.

(2) BAPETEN implements Radioactive Source Security against Radioactive source whose owner is unknown.

(3) Radioactive sources as intended in paragraph (1) and

paragraph (2) is categorized in:

a. category 1;

b. category 2;

c. category 3;

d. category 4; And

e. category 5.

(4) Further provisions regarding the Radioactive Source category regulated by BAPETEN Chairman's Regulations.

The second part
Security of Radioactive Sources Imported, Exported, Used, Stored, or Transported

Article 61

(1) Importers in carrying out imports of Radioactive Sources are obliged to has a permit to Utilize Nuclear Energy from the Head BAPETEN.

(2) Before sending category 1 and category Radioactive Sources 2, the importer is obliged to guarantee that:

a. the user has received a Power Utilization permit Nuclear from the Head of BAPETEN before implementing import; And

b. Exporters in the country of origin have permission from the agency home country supervisor.

Article 62

(1) Exporter, in carrying out the export of Radioactive Sources must have a Nuclear Energy Utilization permit from the Head BAPETEN.

(2) The exporter as intended in paragraph (1) is obliged to guarantee that importers of Category 1 and Category 2 Radioactive Sources in the destination country already has a utilization permit from the agency supervisor in the destination country.

(3) Exporters who will export category 1 Radioactive Sources or category 2 is required to notify the supervisory body in destination country before delivery.

(4) Apart from fulfilling the provisions as intended in paragraph (3), for export of category 1 Radioactive Sources, it must be accompanied by with written approval from the regulatory body of the destination country to BAPETEN before delivery.

Article 63

(1) Implementation of import and export of Radioactive Sources as follows referred to in Article 61 and Article 62 to and from the country Republic of Indonesia can only be done after obtaining approval from BAPETEN.

(2) BAPETEN submits written approval for implementation import of category 1 Radioactive Sources to the regulatory body exporting countries, through importers.

Article 64

In the event that the Radioactive Source cannot be directly sent to destination, the importer or exporter is obliged to provide a place special storage for Radioactive Sources that meets Radioactive Source Safety requirements.

Article 65

Radioactive sources can only be removed from the customs area after obtaining approval from BAPETEN.

Article 66

In terms of transporting Radioactive Sources, the Sender Must obtain shipping approval from BAPETEN.

Article 67

The carrier guarantees the safety of radioactive sources, both during in transportation, as well as storage during transit in accordance with the provisions of statutory regulations.

Article 68

License Holder, to guarantee the Security of Radioactive Sources, responsible for:

a. maintain facilities in accordance with Security requirements Radioactive Sources;

b. have competent and trained personnel accordingly Radioactive Source Security requirements;

c. have equipment in accordance with Security requirements Radioactive Sources;

d. have an appropriate Radioactive Source Safety program with good Radioactive Source Security requirements normal or abnormal conditions, including loss Radioactive Sources;

e. establish and maintain a Source Security organization Radioactive;

f. report immediately if any Security deviation occurs Radioactive Sources include loss of Radioactive Sources to BAPETEN;

g. assign personnel who can be trusted to handle it Radioactive Sources; And

h. guarantee the confidentiality of information related to Radioactive Sources.

Article 69

(1) Radioactive Source Security Organization as referred to in Article 68 letter e may form part of Radiation Safety Manager as referred to in Article 6 paragraph (2) letter c.

(2) Further provisions regarding the form of Security organization Radioactive Sources and responsibilities of Security organizations Radioactive sources are regulated by BAPETEN Head Regulations.

Article 70

(1) Permit holders are required to carry out inventory and recording Radioactive Sources.

(2) Recording of Radioactive Sources as intended in paragraph (1) may form part of a technical record as follows referred to in Article 18 paragraph (2).

(3) Inventory and Recording of Radioactive Sources as follows referred to in paragraph (1) must be reported periodically to BAPETEN.

(4) Further provisions regarding inventory requirements, Recording, and reporting of Radioactive Sources is regulated by BAPETEN Head Regulations.

Article 71

In the event of an emergency Radioactive Source in use or transportation, the Permit Holder is obliged to immediately report to BAPETEN.

Article 72

(1) Permit holders are required to take security measures against Radioactive Sources in the event of an emergency.

(2) Further provisions regarding security measures are regulated with the Regulations of the Head of BAPETEN.

Article 73

(1) BAPETEN secures the Source Radioactive unknown owner.

(2) BAPETEN conducts a search for information regarding ownership of Radioactive Sources as referred to in paragraph (1).

(3) Search for information as intended in paragraph (2) can be carried out with other authorized agencies.

Article 74

If from the results of the search for information as referred to in Article 73 paragraph (2) and paragraph (3), owners of Radioactive Sources:

a. is discovered, then all the resulting consequences will be owner's responsibility; or

b. not found, it is declared as radioactive waste by BAPETEN.

Article 75

Radioactive waste as intended in Article 74 letter b must be stored and managed by the National Nuclear Energy Agency in accordance with **Radioactive Source Safety requirements .**

Article 76

Further provisions regarding Source Security requirements Radioactive as intended in Article 64, Article 68 letter b, and Article 75 is regulated by BAPETEN Chairman's Regulations.

CHAPTER VI

INSPECTION

Article 77

(1) To ensure compliance with Safety requirements Radiation and Safety of Radioactive Sources, BAPETEN carry out inspections of facilities or installations utilizing nuclear power.

(2) The inspection as intended in paragraph (1) is carried out by the Nuclear Safety Inspector.

(3) Nuclear Safety Inspector as referred to in paragraph (2) is appointed and dismissed by BAPETEN.

(4) Provisions regarding appointment and dismissal Nuclear Safety Inspectors are regulated by Chief Regulations BAPETEN.

Article 78

(1) Inspection as intended in Article 77 includes administrative and technical checks.

(2) The inspection as intended in paragraph (1) is carried out periodically or at any time, with or without announcement.

Article 79

(1) The Nuclear Safety Inspector has the authority to:

a. carry out inspections during the licensing process;

b. enter and inspect any facility or installation, agency or location of Nuclear Energy Utilization;

c. carry out radiation monitoring in the installation and at outdoor installation;

d. carry out direct inspections or inspections with notification within a short time interval in case emergencies or abnormal events; And

e. stop Nuclear Energy Utilization activities if
a situation that endangers:
1. safety of workers, society and the environment
life; or
2. Safety of Radioactive Sources.

(2) The Nuclear Safety Inspector can only stop
Nuclear Energy Utilization activities as intended
in paragraph (1) letter e after reporting immediately to and
immediately received a termination order from the Chief
BAPETEN.

CHAPTER VII
ADMINISTRATIVE SANCTIONS

Article 80

Every License Holder and other parties related to
implementation of Nuclear Energy Utilization, which violates
provisions outside the criminal provisions as regulated in Article
41 to Article 44 of Law Number 10 of 1997
regarding nuclear energy, is subject to administrative sanctions.

Article 81

Administrative sanctions as intended in Article 80 can be
in the form of:

a. written warning;
b. temporary suspension of installation operations; and/or
c. license revocation.

Article 82

(1) The Head of BAPETEN gives 3 written warnings
(three) times to License Holders who violate the provisions
as intended in Article 6 paragraph (2) and paragraph (5),
Article 7 paragraph (1), Article 8, Article 9, Article 10, Article 11, Article 12,

Article 13, Article 14, Article 16 paragraph (1), Article 17 paragraph (1), Article 18 paragraph (1) and paragraph (3), Article 22 paragraph (1), Article 23 paragraph (1) and paragraph (3), Article 24, Article 26, Article 29 paragraph (1) to paragraph (6), Article 31 paragraph (1) to paragraph (3), Article 32, Article 33 paragraph (1) to paragraph (4), Article 34 paragraph (1), Article 36, Article 39, Article 40, Article 41 paragraph (1), Article 42 paragraph (1), Article 43 paragraph (1) and paragraph (2), Article 44 paragraph (1), Article 45 paragraph (1), Article 46 paragraph (1) up to paragraph (3), Article 47 paragraph (1) and paragraph (2), Article 60 paragraph (1), Article 62 paragraph (2) to paragraph (4), Article 64, Art 68, and Article 70.

(2) Permit holders are required to follow up on written warnings first within a maximum of 10 (ten) working days starting from the date the written warning is issued First.

(3) If within the time as intended in paragraph (2) The Permit Holder has not complied with the first written warning, The head of BAPETEN gave a second written warning must be fulfilled within 10 (ten) working days from the date of issuance of the second written warning.

(4) If the Permit Holder does not comply with the second warning as referred to in paragraph (3), the Head of BAPETEN provides a third warning that must be fulfilled in within 10 (ten) working days from the date the issuance of a third written warning.

(5) If the Permit Holder still does not comply with the warning as intended in paragraph (4), the Head of BAPETEN revoke the license holder's nuclear energy utilization permit concerned.

Article 83

(1) In the event of a violation of the provisions as follows referred to in Article 20, Article 27 paragraph (1) and paragraph (2), Article

28 paragraph (1), Article 53 paragraph (1), Article 54, Article 71, and Article 72 paragraph

(1) The Head of BAPETEN can immediately stop temporarily operation of the Permit Holder's facilities or installations, which can endanger the safety of workers, members of the public and environment.

(2) Temporary suspension as intended in paragraph (1) valid until the Radiation Safety requirements are met and Radioactive Source Safety.

(3) If during the temporary suspension as intended in paragraph (1) the License Holder does not fulfill the requirements Radiation Safety and Security of Radioactive Sources, and continue to operate the facilities or installations, Head BAPETEN can immediately revoke the Energy Utilization permit Nuclear.

(4) Temporary suspension as intended in paragraph (1) carried out based on the assessment of the Head of BAPETEN.

Article 84

In the case of revocation of the permit as intended in Article 82 paragraph (5) and Article 83 paragraph (3), the License Holder must still Responsible for securing resources utilized it.

CHAPTER VIII
TRANSITIONAL PROVISIONS

Article 85

(1) At the time this Government Regulation comes into force, all Utilization of Nuclear Energy carried out with meet safety requirements as specified in Government Regulation Number 63 of 2000 concerning Safety and Health Regarding the Use of Radiation Ionizers must comply with Radiation Safety regulations and

Radioactive Source Safety in accordance with Regulations this government.

(2) Radiation Safety Provisions for aircraft suitability tests diagnostic and interventional radiology x-rays as referred to in Article 40 must be fulfilled no later than 5 (five) years starting from the effective date of the Government Regulation This.

(3) Radioactive Source Security Provisions as follows as intended in Article 60 to Article 75 is mandatory fulfilled no later than 3 (three) years from the date the enactment of this Government Regulation.

CHAPTER IX

CLOSING

Article 86

When this Government Regulation comes into force, Regulation Government Number 63 of 2000 concerning Safety and Health on the Use of Ionizing Radiation (Plate Republic of Indonesia Year 2000 Number 136, Supplement State Gazette of the Republic of Indonesia Number 3992) is revoked and declared invalid.

Article 87

When this Government Regulation comes into force, all Regulations Legislation which is the implementing regulations of Government Regulation Number 63 of 2000 concerning Safety and Health on the Use of Ionizing Radiation (Plate Republic of Indonesia Year 2000 Number 136, Supplement State Gazette of the Republic of Indonesia Number 3992) stated still valid as long as it does not conflict with the provisions in this Government Regulation.

Article 88

This Government Regulation comes into force on the date of promulgation.

So that everyone knows, order an invitation

This Government Regulation with its placement in the Gazette

Republic of Indonesia.

Stipulated in Jakarta
on June 8 2007

PRESIDENT OF THE REPUBLIC OF INDONESIA,

signed.

DR. H. SUSILO BAMBANG YUDHOYONO

Promulgated in Jakarta
on June 8 2007

MINISTER OF LAW AND HUMAN RIGHTS

REPUBLIC OF INDONESIA,

signed.

ANDI MATTALATTA

STATE GAZETTE OF THE REPUBLIC OF INDONESIA 2007 NUMBER 74

EXPLANATION

ON

GOVERNMENT REGULATIONS OF THE REPUBLIC OF INDONESIA

NUMBER 33 OF 2007

ABOUT

IONIZING RADIATION SAFETY

AND SAFETY OF RADIOACTIVE SOURCES

I. GENERAL

The use of nuclear energy should be carried out by paying attention to aspects safety and security to protect workers, members of the public, and environment, so that regulations are clearer, more effective and consistent regarding Ionizing Radiation Safety and Source Security requirements Radioactivity is very necessary. Regulations regarding Ionizing Radiation Safety previously stipulated by Government Regulation Number 63 of 2000. However, with the development of science, international standards, and the widespread application of nuclear energy technology, there are things that are necessary further regulated by government regulations, including, among other things, additions exposure to natural radiation due to the application of technology, optimization of energy utilization Nuclear in the medical field, and Security of Radioactive Sources.

The preparation of this Government Regulation is harmonized with *the Safety Series* Number 115 of 1996 concerning *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources* prepared based on *International Commission on Radiological Protection* (ICRP) Number 60 1990. This Government Regulation stipulates several requirements safety which was not previously regulated in Government Regulation Number 63 2000, which includes:

a. Radiation Protection requirements, especially for the application of optimization in the field medical with regulations regarding dose and level limits Guide;

b. Dose limitation, which includes determining the area of action and its implementation a tighter one;

c. verification of safety and engineering requirements, in addition to management requirements and Radiation Protection which was not previously clearly regulated in Government Regulation Number 63 of 2000;

d. the scope of regulated sources is wider, from sources that have risks low, such as radioactive sources of natural origin, to high risk such as a nuclear reactor;

e. more detailed worker health monitoring, Safety Culture, and other parties responsible for the Utilization of Nuclear Energy; And

f. intervention in chronic and emergency situations. Intervention in chronic conditions includes *Naturally Occurring Radioactive Material* (NORM) and *Technologically Enhanced Naturally Occurring Radioactive Material* (TENORM).

Another thing regulated in this Government Regulation is Source Security Radioactive. To demonstrate commitment in terms of Source Security Radioactive, Indonesia as a member country of *the International Atomic Energy Agency* (IAEA) has signed a statement of readiness to implement *the Code of Conduct on The Safety and Security of Radioactive Sources.* Source Security Radioactivity is required especially during import and export activities, use, storage and transportation of Radioactive Sources. In addition to activities Therefore, security is required to handle radioactive sources that are not the owner is known, considering that Radioactive Sources like this also have the potential to cause significant radiation impacts and hazards significant. Improvement of regulations carried out through regulations This government further guarantees the safety of workers, members of the public, environment, and Safety of Radioactive Sources.

II. ARTICLE BY ARTICLE

article 1

Quite clear.

Section 2

Quite clear.

Article 3

Quite clear.

Article 4

Paragraph (1)

What is meant by "entity" is a legal entity and business entity.

Paragraph (2)

Quite clear

Paragraph (3)

Quite clear

Paragraph (4)

Quite clear

Article 5

Quite clear.

Article 6

Paragraph (1)

Letter a

The Permit Holder is the primary person responsible for Safety Radiation. Apart from the License Holder, there are also other parties who concerned who can be held responsible in case Radiation Safety based on duties and functions in the facility or installation.

Letter b

What is meant by “other parties related to Utilization of Nuclear Energy" is:

a. Radiation Protection Officer;

b. Radiation Worker;

c. Radioactive Source Security officer;

d. medical and paramedic personnel;

e. experts;

f. parties related to design, manufacturing, construction Source, and/or party who is responsible specifically from the License Holder.

Paragraph (2)

Letter a

Quite clear.

Letter b

Quite clear.

Letter c

The Radiation Protection and Safety Organizer is a forum consisting of representatives of every personnel in the in facilities or installations that utilize Nuclear Energy. The Radiation Protection and Safety Organizer is on duty to assist License Holders in carrying out their responsibilities his responsibility is in the field of radiation protection and safety. Established Radiation Protection and Safety Organizer and determined by the License Holder may consist of persons individuals, committees, or organizations.

Letter d

Quite clear.

Letter e

Quite clear.

Letter f

Quite clear.

Letter g

Quite clear.

Letter h

Quite clear.

Paragraph (3)

Quite clear.

Paragraph (4)

Quite clear.

Paragraph (5)

Quite clear.

Paragraph (6)

Quite clear.

Article 7

Quite clear.

Article 8

Quite clear.

Article 9

Health examination of workers who may have been exposed
radiation during the performance of certain radiation-related tasks
carried out based on general principles of occupational health medicine.
Health checks are carried out before use of work
radiation begins, and periodic checks during work.

a. An initial health check before work is carried out to assess
the worker's health and suitability to carry out the work
assigned to him, and also to identify which worker
who have conditions that may require safety measures
during work.

b. Periodic health checks during work are intended
to ensure that there are no clinical conditions that can
affecting the health of workers that arise when working with
radiation. The nature of this periodic inspection is also based on the type of work
implemented, age and health status, and health behavior
worker. The time span for carrying out health checks like this
generally the same frequency as a health monitoring program
other. In addition, the frequency of health checks is based on
health conditions and type of work. If the character of the job
creates the potential for skin damage due to radiation, especially on the hands,
then the skin area is checked periodically.

c. Health examination at the time of termination of employment intended to find out the worker's latest health condition, which can be used as juridical evidence or health reference for carrying out work related to subsequent radiation.

Article 10

Quite clear.

Article 11

Paragraph (1)

Quite clear.

Paragraph (2)

What is meant by "type of work carried out" is work that uses open sources, which has dangers Internal radiation or radioactive substances enter the body through respiratory, indigestion, or injury. Apart from that, there are types of work that uses packaged sources that have danger External radiation or body exposure to radiation originating from Sources that are outside the body.

Paragraph (3)

Special health checks are carried out if excessive exposure occurs which exceeds the Dose Limit Value or in the event of an accident, OK originating from internal and external radiation sources.
Special health checks include, among other things, detailed examinations to certain organs affected by exposure, chromosomal abrasions, leukocytes, and platelets.

Article 12

Quite clear.

Article 13

Quite clear.

Article 14

Quite clear.

Article 15

In preparing BAPETEN Chairman's Regulations regarding monitoring health, BAPETEN coordinates with the competent authorities in fields of nuclear energy research and development, employment, and health.

Article 16

Quite clear.

Article 17

Quite clear.

Article 18

Paragraph (1)

Quite clear.

Paragraph (2)

Quality records include, among other things, records regarding education and training that personnel at the facility or installation have attended, and Recording of test and calibration results.

Technical records include records regarding various monitoring results Required in this Government Regulation include:

a. safety verification results;

b. worker health monitoring;

c. monitoring the dose received by workers;

d. environmental radioactivity;

e. level of radiation and/or contamination of the work area; and/or

f. inventory of Radioactive Sources.

Paragraph (3)

Quite clear.

Article 19

Quite clear.

Article 20

Paragraph (1)

What is meant by "immediately" is within 1x24 hours of the report
It has been verbally conveyed to BAPETEN through, among others
telephone, e-mail, courier, or fax.

Paragraph (2)

Quite clear.

Article 21

Quite clear.

Article 22

Paragraph (1)

What is meant by "justification for the use of nuclear energy"
is that the activity provides greater benefits
both to individuals exposed to exposure and to the community,
compared to the radiation hazards it causes. In
The justification process considers the likelihood and magnitude of exposure.
The justification for the use of nuclear energy is not only
consider aspects of Radiation Protection and Safety, but also
economic and social considerations. Economic and social considerations
This also has a big influence on a decision
regarding whether the use of nuclear energy can be justified.
For example, the principle of justification is applied to Medical Exposure
taking into account its diagnostic and therapeutic benefits
produced, compared to the radiation hazards caused.
In addition, the benefits and risks of using diagnostic techniques or
Other available therapies should also be considered beforehand
decided to use Medical Exposure.

Paragraph (2)

Quite clear.

Paragraph (3)

Quite clear.

Article 23

Paragraph (1)

Quite clear.

Paragraph (2)

Examples of exposure that come from nature include cosmic rays, radioactivity in the body, and radionuclides contained in the material unprocessed excavation.

Paragraph (3)

What is meant by "special conditions" are conditions at the time an emergency occurs, which causes radiation workers as volunteers who handle emergencies for specific purposes and planned, received an excess dose.

Paragraph (4)

Quite clear.

Article 24

Quite clear.

Article 25

Quite clear.

Article 26

Quite clear.

Article 27

Quite clear.

Article 28

Paragraph (1)

What is meant by "clearance level" is the set value by BAPETEN and expressed in terms of activity concentration and/or total activity at or below that value, with Thus the Radiation Source used can be freed from supervision.

By allowing the release of radioactive substances directly into environment does not necessarily free the Permit Holder to fulfill responsibilities related to consequences or impacts which may arise from the release, as follows: regulated in provisions other than statutory regulations nuclear power.

Paragraph (2)

Quite clear.

Article 29

Quite clear.

Article 30

Quite clear.

Article 31

Quite clear.

Article 32

Quite clear.

Article 33

Paragraph (1)

Provisions for carrying out calibration for radiotherapy are not only applied to the equipment, but also to the output.

Paragraph (2)

Quite clear.

Paragraph (3)

Quite clear.

Paragraph (4)

Quite clear.

Paragraph (5)

Quite clear.

Article 34

Quite clear.

Article 35

Quite clear.

Article 36

Quite clear.

Article 37

Paragraph (1)

What is meant by "Guidance Level" *is* value guidelines that should be achieved through the implementation of medical activities with proven methods. Guide values for radiology activities diagnostic is expressed in dose value or dose rate, whereas for Nuclear medicine activities are expressed in terms of radioactive source activity.

Paragraph (2)

Quite clear.

Article 38

Quite clear.

Article 39

Paragraph (1)

Quite clear.

Paragraph (2)

What is meant by "not in accordance with the Guideline Level" is the exposure given to patients is more exposure

higher or lower than the value set by the Level Guide *(Guidance Level).*

Paragraph (3)

Quite clear.

Article 40

Paragraph (1)

The conformity test is intended to:

a. ensure that equipment is used in procedures Diagnostic radiology is functioning properly so that the patient does not get unnecessary exposure; And

b. implement a Quality Assurance Program for diagnostic radiology.

Paragraph (2)

Quite clear.

Paragraph (3)

Quite clear.

Paragraph (4)

Operation and safety parameters include kilovoltage (kV), milliamper-seconds (mA), exposure field area, and focal distance to film *(focus film distance).*

Paragraph (5)

Quite clear.

Article 41

Quite clear.

Article 42

Paragraph (1)

The layered defense system is intended to:

a. prevent abnormal conditions from occurring;

b. prevent abnormal conditions as referred to in letter a does not continue to be an accident and returns radioactive source to a safe condition if the condition is abnormal still happening; And

c. Mitigate the consequences of accidents so that they are not dangerous worker safety, community and environmental protection alive if the accident still occurs.

Paragraph (2)

Quite clear.

Article 43

Paragraph (1)

Quite clear.

Paragraph (2)

Letter a

Documented instruments in this paragraph include, among others implementation instructions, technical instructions, and guidelines.

Letter b

Quite clear.

Letter c

Quite clear.

Letter d

Quite clear.

Paragraph (3)

Quite clear.

Article 44

Quite clear.

Article 45

Paragraph (1)

Quite clear.

Paragraph (2)

Letter a

Identify the occurrence of Normal Exposure and Potential Exposure carried out by considering the influence of external events

towards the Source and events involving the Source and the equipment.

Letter b

Quite clear.

Letter c

Quite clear.

Paragraph (3)

Quite clear.

Article 46

Paragraph (1)

Implementation of “monitoring and measurement of safety parameters” intended to verify compliance with compliance safety requirements while the Source is in operation.

Safety parameters monitored and measured include:

a. nuclear fuel temperature for nuclear reactors; And

b. mA, time and kV for X-ray aircraft.

Paragraph (2)

Quite clear.

Paragraph (3)

Quite clear.

Paragraph (4)

Quite clear.

Paragraph (5)

Quite clear.

Article 47

Quite clear.

Article 48

Quite clear.

Article 49

Paragraph (1)

What is meant by "remedial action" is restoration in its original state so that the radioactive concentration is below Level of Intervention. Examples of remedial actions include: area decontamination.

Paragraph (2)

Protective actions are aimed at workers and the community be in the vicinity of facilities or installations that experience accidents radiation. These protective measures include:

a. protection, such as underground bunkers;

b. evacuation; And

c. prophylactic administration of iodine or other similar substances.

Paragraph (3)

Quite clear

Article 50

Paragraph (1)

What is meant by "entity" is a legal entity and business entity. TENORM is generally an associated mineral derived from mining and industrial activities. Entrepreneurs who because of their activities This results in TENORM not being the utilization permit holder nuclear power, so that the implementation of this provision is necessary coordination with agencies responsible in the field mining and industry.

Paragraph (2)

Quite clear.

Paragraph (3)

Quite clear.

Article 51

Quite clear.

Article 52

Quite clear.

Article 53

Quite clear.

Article 54

Quite clear.

Article 55

Quite clear.

Article 56

Letter a

Quite clear.

Letter b

What is meant by "mitigation action" is action to limit and reduce exposure if a potential event occurs cause or increase radiation exposure. The action includes, among other things, the use of proven safety features and operational procedures to control each series of events in order reduced impact. Provisions regarding mitigation are unlimited only on plans for intervention, but can be implemented at the design and operation stages to reduce circuit impacts accident, so intervention is not necessary.

Letter c

Quite clear.

Letter d

Quite clear.

Letter e

Quite clear.

Article 57

Letter a

Quite clear.

Letter b

Quite clear.

Letter c

Quite clear.

Letter d

Mitigation procedures include, among other things, protective measures and remedial.

Letter e

The emergency management training program includes, among other things: countermeasure trials and exercises inside and outside the area held by the License Holder periodically.

Article 58

Quite clear.

Article 59

Quite clear.

Article 60

Paragraph (1)

Quite clear.

Paragraph (2)

Quite clear.

Paragraph (3)

Categorization of Radioactive Sources is based on source potential Radioactive which can cause immediate radiation effects occurs after the dose threshold is exceeded (deterministic effect).

Paragraph (4)

Quite clear.

Article 61

Quite clear.

Article 62

Quite clear.

Article 63

Quite clear.

Article 64

What is meant by "destination place" is the location of the facility or installation user.

What is meant by "provide" is that the License Holder can Own the facility yourself or rent it.

If delivery can be made immediately, storage as regulated in this Article is not necessary.

Article 65

What is meant by "customs area" is as intended in the law that regulates customs, namely areas with certain limits at sea ports, airports, or other places set for completely subordinate freight traffic supervision of the Directorate General of Customs and Excise.

Article 66

Quite clear.

Article 67

Quite clear.

Article 68

Quite clear.

Article 69

Quite clear.

Article 70

Quite clear.

Article 71

What is meant by "emergency" includes, among other things, loss, sabotage, attacks on Radioactive Sources, and emergencies.

Article 72

Quite clear.

Article 73

Quite clear.

Article 74

Quite clear.

Article 75

Quite clear.

Article 76

Quite clear.

Article 77

Quite clear.

Article 78

Quite clear.

Article 79

Quite clear.

Article 80

Quite clear.

Article 81

Quite clear.

Article 82

Quite clear.

Article 83

Quite clear.

Article 84

Quite clear.

Article 85

Quite clear.

Article 86

Quite clear.

Article 87

Quite clear.

Article 88

Quite clear.

SUPPLEMENT TO THE STATE GAZETTE OF THE REPUBLIC OF INDONESIA NUMBER 4730