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PART I : SECTION (I) — GENERAL

Government Notifications

L.D.B. 16/2014

SRI LANKA ATOMIC ENERGY ACT, No. 40 OF 2014

REGULATIONS made by the Minister of Power and Energy under Section 86(2)(g) of the Sri Lanka Atomic Energy Act, No. 40 of 2014.

KANCHANA WIJESEKERA,
Minister of Power and Energy.

Colombo,
25th November, 2022.

REGULATIONS

1. These Regulations may be cited as the “Security of Radioactive Sources during Manufacture, Use or Storage” regulations and shall come into operation on 01.12. 2022.

2. These regulations specify the basic requirements for the security of radioactive sources.



3. A radioactive source or an aggregation of radioactive source shall assign a security level as specified in Table I to the Schedule I hereto, based on the potential harm that the radioactive source could cause if it were used in a malicious act, as follows :-

- (a) category 1 radioactive sources are assigned to security level A ;
- (b) category 2 radioactive sources are assigned to security level B ;
- (c) category 3 radioactive sources are assigned to security level C.

4. Any radioactive source that is not listed in Table I to the Schedule I hereto shall assign a security level after determining the category of the radioactive source based on the ratio of activity of its radionuclide and the corresponding D value as specified in Table II and III to Schedule I hereto.

5. These regulations shall not apply to any nuclear material, except for radioactive sources incorporating plutonium - 239.

6. These regulations shall apply to the management of all A, B and C security levels specified in table 1 to the Schedule 1 hereto.

7. A person shall not engage in the management of radioactive source if the requirements of these regulations are not fulfilled.

8. When a licence is required to conduct a practice involving ionizing radiation (hereinafter referred to as “practice”) in terms of Section 21 of the Sri Lanka Atomic Energy Act, No. 40 of 2014 (hereinafter referred to as the “Act”) the Sri Lanka Atomic Energy Council established under the Act (hereinafter referred to as the “council”) shall request the applicant to provide information in relating of security arrangements provided or to be provided to radioactive sources and the facility in which the radioactive sources are to be managed in order to determine whether the requirements given in these regulations are met.

9. Upon the request of the Council, any licensee of a licensed facility of the Council shall take appropriate steps to connect the physical security system installed at the facility to a central monitoring station recommended by the Council to enable the response personnel to view video images of the facility and sources and to communicate with relevant persons in the facility to take early actions for interruption and prevention of a unauthorised acts and removal of the sources.

10. The council shall not issue a licence if the applicant demonstrates that requirements given in these regulations are not fulfilled.

11. A licensee shall permit any authorized inspector of the council appointed under section 15 of the Act for immediate access to premises and facilities in which radioactive sources are located in order to obtain information about the status of security and verify compliance with regulatory requirements. Each licensee shall provide the council as required any information and any record regarding security of radioactive sources.

12. A licensee, in the event of any failure to comply with any applicable requirement by these regulations shall -

- (a) report to the council within 24 hours ;
- (b) take appropriate action to remedy the circumstances and to prevent a recurrence of similar situations ;
- (c) investigate the failure and its causes, circumstances or consequences ; and
- (d) provide the council with a report on the causes of the failure, its circumstances and consequences, and on the corrective or preventive actions taken or to be taken within 30 days, or as required.

13. Where in a situation involving the loss of control of radioactive source, unauthorized access to actual or attempted theft of radioactive source or sabotage of a radioactive source has occurred or is occurring, a licensee shall-

- (a) immediately inform the council and law enforcement bodies ;
- (b) take appropriate action to remedy the circumstances and to prevent a recurrence of similar situations ;
- (c) investigate the event and its causes, circumstances and consequences ; and
- (d) provide the council with a report on the causes of the event, its circumstances and consequences, and on the corrective or preventive actions taken or to be taken within 30 days, or as required.

14. (1) A licensee shall bear the responsibility for establishing and implementing the measures that are needed for ensuring security of radioactive sources and for compliance with all requirements of these regulations.

(2) A licensee shall notify the council of licensee's intention to introduce any modification to facilities or activities affecting the security of a radioactive source and shall not carry out any such modification unless specifically authorized by the council.

15. The licence may be revoked, suspended, modified, or the possession of a radioactive source may be prohibited upon finding of non-compliance with applicable requirements of these regulations by the council.

16. (1) These regulations shall not prevent the licensee from complying with other applicable laws and regulations governing safety or security. Where a conflict exists between requirements contained herein and other laws or regulations, the council shall be notified of such conflict in order to take to resolve such conflict.

(2) Nothing in these regulations shall be construed as restricting any actions that may otherwise be necessary for safety or security.

(3) A licensee shall comply with any additional requirements imposed by the Council by regulations, orders, or conditions of a licence, in addition to the requirements imposed by these regulations, as deemed appropriate or necessary for the security of radioactive sources.

17. A licensee shall set up a management system, commensurate with the size and nature of the authorized activity, which ensures that-

- (a) policies and procedures are initiated with as security being the highest priority ;
- (b) problems affecting security are identified and corrected in a manner commensurate with their importance ;
- (c) the responsibilities of each individual for security are clearly identified and each individual is suitably trained and qualified.
- (d) the authority for decisions on security are identified ; and
- (e) organizational arrangements and lines of communications are formed which result an appropriate flow of information on security and the various levels in the entire organization of the Licensee.

18. (1) A licensee shall ensure that all personnel on whom security depends are appropriately trained and qualified and perform their duties according to set out procedures. They shall be periodically retrained or re-qualified as may be appropriate. Training programmes shall be evaluated routinely.

(2) Every employee shall be informed annually of the importance of effective security measures.

19. A licensee shall establish quality assurance programmes that provide -

- (a) adequate assurance that the specific applicable requirements relating to security are satisfied,
- (b) assurance that the components of the security system are of a quality sufficient for their tasks ; and
- (c) quality control mechanisms and procedures for reviewing and assessing the overall effectiveness of security measures.

20. A licensee shall not transfer any radioactive source to another party unless :-

- (a) an approval is obtained from the council ;
- (b) the recipient possesses a valid licence for the sources ; and
- (c) the recipient is provided with all relevant technical information regarding the safe and secure management of the radioactive sources.

21. The three security levels based on category of radioactive sources specified in Table 1 to the Schedule 1 hereto shall specify requirements for security system, performance. Each security level has a corresponding goal. The goal defines the overall result that the security system shall be capable of providing for a given security level. The levels and the goals shall be as follows :

- (a) Security level A - prevent the unauthorized removal of radioactive sources, If an attempt at unauthorized access or unauthorized removal occurs, to enable personnel to respond with enough time and sufficient resources to interrupt the adversary in order to prevent that source being removed,
- (b) Security level B - minimize the likelihood of unauthorized removal of radioactive sources. If an attempt of unauthorized access or unauthorized removal occurs, the response must be initiated immediately upon detection and assessment of the intrusion,
- (c) Security level C - reduce the likelihood of unauthorized removal of radioactive sources.

22. Any licensee, in order to achieve the goal of security level A, which is to prevent the unauthorized removal of radioactive sources shall comply with the following requirements :-

(1) Detection :

- (a) shall provide immediate detection of any unauthorized access to the secured location of area or source by the use of an electronic intrusion detection system and/or continuous surveillance by operator personnel ;
- (b) shall provide immediate detection of any attempted unauthorized removal of the source (*e. g.* an insider) by the use of electronic tamper detection equipment and/or continuous surveillance by operator personnel;
- (c) shall provide immediate assessment of detection by the use of remote monitoring of CCTV or assessment by operator or response personnel ;
- (d) shall provide immediate communication to response personnel through rapid and dependable means of communication such as phones, cell phones, pagers or radios ; and
- (e) shall provide a means to detect loss through verification by daily by physical checks, CCTV, tamper indicating devices, *etc.*

(2) Delay :

shall provide delay, after detection sufficient response for personnel to interrupt the unauthorized removal through a system of at least two layers of barriers (*e. g.* walls, Cages) which together provide delay sufficient to enable response personnel to interdict.

(3) Response

shall provide immediate response to alarm with sufficient resources to interrupt and prevent the unauthorized removal through the capability for immediate response with size, equipment and training to interdict. A security contingency plan shall be prepared and issued to relevant persons and stakeholders responsible for management of security event.

23. Any licensee, in order to achieve the goal of security level B, which minimizes the unauthorized removal of radioactive sources, shall comply with the following requirements :

(1) Detection :

- (a) shall provide immediate detection of any unauthorized access to the secured location of area or source by the use of electronic, intrusion detection equipment and/or Continuous surveillance by operator personnel ;
- (b) shall provide detection of any attempted unauthorized removal of the source through the use of tamper detection equipment and/or periodic checks by operator personnel ;
- (c) shall provide immediate assessment of detection through remote monitoring of CCTV or assessment by operator or response personnel ;
- (d) shall provide immediate communication to response personnel through rapid and dependable means of communication such as phones, cell phones, pagers or radios ; and
- (e) shall provide means to detect loss through verification by weekly by physical checks, tamper detection equipment, *etc.*

(2) Delay :

shall provide delay to minimize the likelihood of unauthorized removal through a system of two layers of barriers (e. g. walls, cages).

(3) Response :

shall provide immediate initiation of response to interrupt unauthorized removal through the use of equipment and procedures to immediately initiate response. A security contingency plan shall be prepared and shared with relevant persons and stakeholders responsible for management of security event describing methods for immediate response.

24. Any licensee, in order to achieve the goal of security level C which reduces the unauthorized removal of radioactive sources, shall comply with the following requirements :-

(1) Detection :

- (a) shall provide detection for unauthorized removal of the source through the use of tamper detection equipment and/or periodic checks by operator personnel.
- (b) shall provide immediate assessment of detection through an assessment by operator or response personnel.
- (c) shall provide a means to detect loss through verification by monthly by physical checks, tamper indicating devices, *etc.* ;

(2) Delay :

shall provide delay to reduce likelihood of unauthorized removal by the use of one barrier (e. g. cage, source housing) or through observation by operator personnel.

(3) Response :

shall implement appropriate action in the event of unauthorized removal of a source by the use of procedures for identifying necessary actions in accordance with security contingency plans, A security contingency plan shall be prepared and shared with relevant persons and stakeholders responsible for management of security event describing methods for immediate response.

25. (1) Any person who submits an application for a licence under Section 21 of the Act to conduct a practice shall provide an attachment to the application the arrangements established for physical protection of sources and facilities describing instruments, equipments, barriers, enclosures, types of communication instruments to be provided to the sources and facilities for detection, delay and response to meet the requirements given in regulations 22, 23 and 24 in accordance with the security level of the sources and facilities.

(2) Any person who submits an application for a licence under Section 21 of the Act to conduct a practice shall also provide the security contingency plan with the application which identifies reasonably foreseeable security events ; initial planned actions, and responsibilities assigned to appropriate facility personnel and response personnel.

(3) The applicant shall submit the application for licence the detailed description of maintenance programmes established for physical protection system installed as given in subsection (1) including names and qualifications of personnel responsible for maintenance of the physical protection system to ensure continuous operation of the physical protection for the sources and facilities.

(4) Where the installation and/or maintenance of the physical security systems is required under these regulations, the licensee shall not sign a contract for installation and/or maintenance of the physical security system with such party or company, unless that party or company is registered with the council as a physical security contractor.

(5) Any physical security contractor shall not provide or undertake installation or maintenance of physical security system under these regulations without certificate of registration obtained from the council. Application for registration of the party or the company shall be submitted to the council in the prescribed forms.

26. A licensee shall not obtain a nuclear security related service including service for training of personnel in Nuclear security from any Nuclear security support service provider except with the approval of the Council.

27. In order to achieve the goals stated in regulation 21 a licensee shall :-

- (a) provide access control to source location that effectively restrict access to authorized persons by -
 - (i) identification and verification, for example, lock controlled by swipe card reader and personal identification number, or key and key control for security level A ; and
 - (ii) one identification measure for security level B and C ;
- (b) ensure trustworthiness of authorized individuals through background checks for all personnel authorized for unescorted access to the location of source and for access to sensitive information ;
- (c) identify and protect sensitive information through the use of procedures to identify sensitive information and protect it from unauthorized disclosure ;
- (d) provide a site security plan to conform to regulation 3 and provide for response to increased threat levels for security level A and B by written security arrangements and reference procedures for security level C ; and

- (e) ensure capability to manage security events covered by security plans through procedures for responding to security-related scenarios.
- (f) initiate a security event reporting system.

28. A licensee shall prepared a site security plan for radioactive sources in security levels A and B, including the facility in which the sources are to be managed which meets the following requirements.

- (a) the site security plan shall contain all the requirements as set out in the Schedule II hereto ;
- (b) the site security plan shall be tested and evaluated annually against the security objectives and measures required for security level A or B, as applicable. The site security plan shall be reviewed based upon the results of the test. Any deficiency in the plan or security systems shall be duly attended and reported to the council ; and
- (c) the site security plan and any modifications to such plan shall be submitted to the council as part of the licence application by an applicant of a licence and the licence renewal application forwarded by a licensee as the case may be for approval.

29. Where it is not feasible to meet the requirement of regulation 22, 23 and 24 for mobile or portable radioactive source, the licensee shall include a description of the measures that will be used to provide an equivalent level of security in the application and the security plan.

30. (1) If a licensee becomes aware of, or suspect that there is a specific threat targeting a radioactive source, the licensee shall increase the security measures in accordance with the threat and the council shall be informed immediately the security measures taken.

(2) The increased security measures may include -

- (a) returning the source to its secure storage location if it is in use ;
- (b) providing a 24- hour security using additional video cameras or an additional intrusion alarm.
- (c) ensuring that law enforcement persons and the regulatory council are aware of the suspected threat ;
- (d) reviewing security procedures, facility layout and radiation safety practices with the law enforcement and emergency response personnel ; and
- (e) ensuring emergency response procedures are valid, including medical facilities with a well-equipped trained personnel who can handle radioactive emergencies.

(3) The increase of security measures shall be continued until specific threat is present.

(4) the increase of security measures shall be provided for security level A and B radioactive sources during period of source deliver, shipment, or under other vulnerable conditions (e. g. source exchange, maintenance)

31 (1) A licensee shall maintain an annual inventory of radioactive sources and keep records of updated inventories for inspection by the council.

- (2) The inventories shall be adjusted upon transfer or receipt of radioactive sources.
- (3) Individual radioactive source records shall include the following :
 - (a) location of the source ;

- (b) radionuclide ;
- (c) radioactivity on a specified date ;
- (d) serial number or unique identifier ;
- (e) chemical and physical form ;
- (f) source use history, including recording all movements into and out of the storage location ;
- (g) receipt, transfer or disposal of the source ; and
- (h) other information, as appropriate, to enable the source to be identifiable and traceable.

32. In these regulations :-

- “Act” means Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “applicant” means a person who submits an application to obtain a licence by section 21 of the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “council” means Sri Lanka Atomic Energy Regulatory Council established by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “delay” means the element of a physical protection system designed to increase the time required for an adversary to gain unauthorized access to or to remove or sabotage a radioactive source, through barriers or other physical means ;
- “detection” means a process in a physical protection system that begins with sensing a potentially malicious or other unauthorized act and that is completed with the assessment of the cause of the alarm ;
- “facility” shall have the same meaning assigned to it by the Sri Lanka Atomic Energy Act No. 40 of 2014 ;
- “imports” means the physical transfer, into an importing state or to a recipient in an importing State, originating from an exporting State, of one or more radioactive source(s) covered by these regulations ;
- “Ionizing radiation” shall have the same meaning assigned to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “licence” shall have the same meaning assign to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “licensee” shall have the same meaning assign to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “management” means the administrative and operational activities that are involved in the manufacture, supply, receipt, possession, storage, use, transfer, import, export, maintenance, recycling or disposal of radioactive sources ;
- “malicious act” means and act or attempt of unauthorized removal of a radioactive source or sabotage ;
- “nuclear material” shall have the same meaning assigned to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “physical security contractor” means a person or a company registered with the council having adequate human resources with proper qualifications, and experience for installation, maintenance and training of persons of physical security instruments required under these regulations.
- “physical security system” means an integrated set of physical protection measures intended to prevent the completion of a malicious act ;
- “practice involving ionizing radiation” shall have the same meaning assigned to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “radioactive material” shall have the same meaning assigned to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014.
- “radioactive source” shall have the same meaning assigned to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
- “response” means the actions undertaken following detection to prevent an adversary from succeeding or to mitigate potentially severe consequences. These actions, typically performed by security or law enforcement personnel, and other State agencies, include interrupting and subduing and adversary while the attempted unauthorized removal or sabotage is in progress, preventing the adversary from using the radioactive source to cause harmful consequences, recovering the radioactive source, or otherwise reducing the severity of the consequences ;
- “sabotage” means any deliberate act directed against a radioactive source or associated facility or activity that could directly or indirectly endanger the health and safety of personnel, the public, or the environment by exposure to radiation or release of radioactive substances.

“safety” shall have the same meaning assigned to it by the Sri Lanka Atomic Energy Act, No. 40 of 2014 ;
 “security culture” means the assembly of characteristics, attitudes and behaviors of individuals, organizations and institutions which serve as means to support, enhance and sustain nuclear security ;
 “security contingency plan” means a part of the security plan or a stand-alone document that identifies reasonably foreseeable security events, provides initial planned actions, (including alerting appropriate authorities) and assigns responsibilities to appropriate operator personnel and response personnel ;
 “site security plan” means a documents prepared by the operator that presents a detailed description of the security arrangements in place at a facility ;
 “security event” means and event that is assessed as having implications for nuclear security ;
 “storage” means the holding of radioactive sources in a facility that provides for their containment with the intention of retrieval ;
 “threat” means a person or group of persons with motivation, intention and capability to commit a malicious act ;
 “trustworthiness determination” means an assessment of an individual’s integrity, honesty and reliability in pre-employment checks and checks during employment that are intended to identify the motivation or behaviour of persons who could become insiders ; and
 “unauthorized removal ” means the theft or other unlawful taking of radioactive sources.

(Regulations 3, 4, 6 and 21)

Schedule I

TABLE I

SECURITY LEVELS ASSIGNED TO COMMONLY USED SOURCES

<i>Security Level</i>	<i>Source</i>	<i>Category</i>
A	Radioisotope thermoelectric generators (RTGs) Irradiators used in sterilization and food preservation Self-shielded Irradiators Blood/Tissue Irradiators Teletherapy sources Fixed multibeam teletherapy (gamma knife) sources	1
B	Industrial gamma radiography sources High/medium dose rate brachytherapy sources	2

Schedule I (Contd.)

Security Level	Source	Category
C	Fixed /Mobile industrial gauges that incorporate high activity radioactive sources given below with respect to different source types and radionuclides Level gauges Cs - 137 : Activity 3.7E-02 TBq or higher Co - 60 : Activity 3.7E-03 TBq or higher Calibration sources Am - 241 : Activity 1.9E-01 TBq or higher\ Pu - 239/Be : Activity 7.4E-02 TBq or higher Conveyor gauges Cs - 137 : Activity 1.1E-04 TBq or higher Cf - 252 : Activity 1.4E-03 or higher Blast furnace gauges Co - 60 : Activity 3.7E-02 TBq or higher Dredger gauges Cs - 137 : Activity 7.4E-03 TBq or higher Co - 60 : Activity 9.3E-03 TBq or higher Well logging gauges Am - 241/Be : Activity 1.9E-02 TBq or higher Cs - 137 : Activity 3.7E-02 TBq or higher Cf - 252 : Activity 1.0E-03 or higher	3

TABLE II

CATEGORIZATION OF RADIOACTIVE SOURCES

Radioactive sources are categorized from category 1 to 5 in terms of the ratio of activity of their radionuclides and the corresponding D value (Dangerous source) which is the radionuclide specific activity of a radioactive source which, if not under control, could cause severe deterministic effects for a range of scenarios that include both external exposure from an unshielded radioactive source and internal exposure following dispersal of material of the radioactive source.

Assignment of Categories for the Radioactive sources based on Radionuclide Activity (A) and D^a value

Activity ratio (A/D)	Based on D values	Category
$A/D \geq 1000$	$A \geq 1000D$	1
$1000 > A/D \geq 10$	$1000D > A \geq 10D$	2
$10 > A/D \geq 1$	$10D > A \geq 1D$	3
$1 > A/D \geq 0.01$	$1D > A \geq 0.01D$	4
$0.01 > A/D$ and more than exempt activity	$0.01D > A$ and more than exempt activity	5

a. D values for selected radionuclides are given in Column 3 of Table III

TABLE III

ACTIVITY CORRESPONDING TO A DANGEROUS SOURCE (D VALUE) FOR SELECTED RADIONUCLIDES, AND MULTIPLES THEREOF

Radionuclide	1000xD		10xD		D	
	(TBq)	(Ci) ^a	(TBq)	(Ci) ^a	(TBq)	(Ci) ^a
Am -241	6.E+01	2.E+03	6.E - 01	2.E+01	6.E -02	2.E + 00
Am - 241/Be	6.E+01	2.E+03	6.E - 01	2.E+01	6.E -02	2.E + 00
Cf-252	2.E+01	5.E+02	2.E - 01	5.E -00	2.E -02	5.E - 01
Cm -244	5.E+01	1.E+03	5.E - 01	1.E+01	5.E -02	1.E + 00
Co - 60	3.E+01	8.E+02	3.E - 01	8.E+00	3.E -02	8.E - 01
Cs -137	1.E+02	3.E+03	1.E + 00	3.E+01	1.E -01	3.E + 00
Gd -153	1.E+03	3.E+04	1.E + 01	3.E + 02	1.E + 00	3.E + 01
Ir - 192	8.E+01	2.E+03	8.E - 01	2.E + 01	8.E - 02	2.E + 00
Pm -147	4.E+04	1.E+06	4.E + 02	1.E + 04	4.E + 01	1.E + 03
Pu -238	6.E+01	2.E+03	6.E - 01	2.E + 01	6.E - 02	2.E + 00
Pu -239 ^b /Be	6.E+01	2.E+03	6.E - 01	2.E + 01	6.E - 02	2.E + 00
Ra - 226	4.E+01	1.E+03	4.E - 01	1.E + 01	4.E - 02	1.E + 00
Se -75	2.E+02	5.E+03	2.E + 00	5.E + 01	2.E - 01	5.E + 00
Sr - 90 (Y -90)	1.E+03	3.E+04	1.E + 01	3.E + 02	1.E + 00	3.E + 01
Tm -170	2.E+04	5.E+05	2.E + 02	5.E + 03	2.E + 01	5.E + 02
Yb - 169	3.E+02	8.E+03	3.E + 00	8.E + 01	3.E - 01	8.E + 00
Au -198*	2.E+02	5.E+03	2.E + 00	5.E + 01	2.E - 01	5.E + 00
Cd - 109*	2.E+04	5.E+05	2.E + 02	5.E + 03	2.E + 01	5.E + 02
Co - 57*	7.E+02	2.E+04	7.E + 00	2.E + 02	7.E - 01	2.E + 01
Fe - 55*	8.E+05	2.E+07	8.E + 03	2.E + 05	8.E + 02	2.E + 04
Ge - 68*	7.E+01	2.E+03	7.E - 01	2.E + 01	7.E - 02	2.E + 00
Ni - 63*	6.E+04	2.E+06	6.E + 02	2.E + 04	6.E + 01	2.E + 03
Pd - 103*	9.E+04	2.E+06	9.E + 02	2.E + 04	9.E + 01	2.E + 03
Po - 210*	6.E+01	2.E+03	6.E - 01	2.E + 01	6.E - 02	2.E + 00
Ru - 106 (Rh - 106)*	3.E+02	8.E+03	3.E + 00	8.E + 01	3.E - 01	8.E + 00
Tl -204*	2.E+04	5.E+05	2.E + 02	5.E + 03	2.E + 01	5.E + 02

^a The primary values to be used are given in TBq, Curie values are provided for practical usefulness and are rounded after conversion.

^b Criticality and safeguards issues will need to be considered for multiples of D.

* These radionuclides are very unlikely to be used in individual radioactive sources with activity levels that would place them within Categories 1, 2 or 3

Note : D values of radionuclides which are not given in this annex is decided by the Council as and when such data is required.

Aggregation of sources

There will be situations in which several radioactive sources are in close proximity, such as in manufacturing processes (e. g. in the same room or building) or in storage facilities (e. g. in the same enclosure). In such circumstances, if only one radionuclide is present the summed activity of the radioactive sources shall be divided by the appropriate D value of the radionuclide and the calculated ratio A/D compared with the ratios A/D given in Table II to determine the corresponding security level, if radioactive sources with various radionuclides are present and to be aggregated, then the sum of the ratios A/D shall be used in determining the category, in accordance with the formula :

Aggregate A/D =

$$\sum_n \frac{\sum_i A_{i,n}}{D_n}$$

Where :

$A_{i,n}$ = activity of each individual source i of radionuclide n .

D_n = D value for radionuclide n .

(Regulation 28)

Schedule II

EXAMPLES OF CONTENT FOR A SECURITY PLAN

A security plan shall include all information necessary to describe the security approach and system being used for protection of the sources (s). The level of detail and depth of content shall be commensurate with the security level of the source(s) covered by the plan. The following topics shall typically be included :

- (a) a description of the source, its categorization, and its use ;
- (b) a description of the environment, building and/or facility where the sources is used or stored, and it appropriate a diagram of the facility layout and security system ;
- (c) the location of the building or facility relative to areas accessible to the public ;
- (d) local security procedures ;
- (e) the objectives of the security plan for the specific building or facility, including :-
 - (i) the specific concern to be addressed ; unauthorized removal, destruction, or malevolent use ;
 - (ii) the kind of control needed to prevent undesired consequences including the auxiliary equipment that might be needed ; and
 - (iii) the equipment or premises that will be secured.
- (f) the security measures to be used, including :-
 - (i) the measures to secure, provide surveillance, provide access control, detect, delay, respond and communicate ; and
 - (ii) the design features to evaluate the quality of the measures against the assumed threat ;
- (g) the administrative measures to be used, including :-
 - (i) the security roles and responsibilities of management, staff and others ;

- (ii) routine and non-routine operations, including accounting for the source (s) ;
 - (iii) maintenance and testing of equipment ;
 - (iv) determination of the trustworthiness of personnel ;
 - (v) the application of information security ;
 - (vi) methods for access authorization ;
 - (vii) security-related aspect of the emergency plan, including event reporting ;
 - (viii) training ; and
 - (ix) key control procedures.
-
- (h) the procedures to address increased threat level ;
 - (i) the process for periodically evaluating the effectiveness of the plan and updating it accordingly ;
 - (j) any compensatory measures that may need to be used ; and
 - (k) references to existing regulations or standards.

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