Legal Notice No……

THE NUCLEAR REGULATORY ACT
No. 29 of 2019

IN EXERCISE of the powers conferred by Section 98 of the Nuclear Regulatory Act No.29 of 2019, the Cabinet Secretary responsible for matters relating to health, makes the following Regulations–

NUCLEAR REGULATORY ACT (EMERGENCY PREPAREDNESS AND RESPONSE) REGULATIONS, 2021

ARRANGEMENT OF THE REGULATIONS

SCHEDULES

	PART I: PRELIMIINARY
Citation.	1. These Regulations may be cited as the Nuclear Regulatory (Emergency Preparedness and Response) Regulations, 2021.
Interpretation.	2. In these Regulations, unless the context otherwise requires, the following definitions shall apply for the purposes of these Regulation: "Act" means the Nuclear Regulatory Act, 2019. "Deterministic effect" means radiation induced health effect for which generally a threshold level of dose exists above which the severity of the effect is greater for a higher dose.

	"Dangerous Materials" means materials which have the potential for causing radiation exposure and environmental contamination or concern. "Emergency" means non-routine situation or event that necessitates prompt action, primarily to mitigate a hazard or adverse consequences for human life, health, property or the environment. This includes nuclear and radiological emergencies and conventional emergencies such as fires, releases of hazardous chemicals, storms or earthquakes. "Nuclear or radiological emergency" means an emergency in which there is, or is perceived to be, a hazard due to the energy resulting from a nuclear chain reaction or from the decay of the products of a chain reaction, or due to radiation exposure. "Emergency Action Level (EAL)" means a specific, predetermined criterion for observable conditions used to detect, recognize and determine the emergency class. "Emergency arrangements" means the integrated set of infrastructural elements, put in place at the preparedness stage, that are necessary to provide the capability for performing a specified function or task required in response to a nuclear or radiological emergency. These elements include: authorities and responsibilities, organization, coordination, personnel, plans, procedures, facilities, equipment or training. "Emergency class" means a set of conditions that warrant a similar immediate emergency response that is used for communicating to the response organizations and the public on the level of response needed including the predefined initial actions of the response organizations. "Emergency classification" means the process whereby an authorized official classifies an emergency in order to declare the applicable emergency class. "Emergency exposure situation" means a situation of exposure that arises as a result of an accident, a malicious act or other unexpected event, and requires prompt protective actions and other response action in order to avoid or to reduce adverse consequences. "Emergency plan" a description of the objectives, policy and concept of operations for the response to an emergency and of the structure, authorities and responsibilities for a systematic, coordinated and effective response. "Emergency planning distance" means the extended planning distance (EPD) and the ingestion and commodities planning distance (ICPD). "Emergency planning zone" means the Precautionary Action Zone (PAZ) and the Urgent Protective action planning Zone (UPZ). "Emergency preparedness" means the capability to take actions that will effectively mitigate the consequences of an emergency for human life, health, property and the environment. "Emergency procedures" means a set of instructions describing in detail the actions to be taken by emergency workers in an emergency.

	"Emergency response" means the performance of actions to mitigate the consequences of an emergency for human life, health, property and the environment "Emergency (response) action" means an action to be taken in response to a nuclear or radiological emergency to mitigate the consequences of an emergency for human life, health, property and the environment. These comprise protective actions and other response actions such as: (i) medical examination, consultation and treatment; (ii) registration and longer-term medical follow-up; (iii) providing psychological counseling; and (iv) public information and other actions for mitigating non-radiological consequences and for public reassurance. "Emergency response facility or location" means a facility or location necessary for supporting an emergency response, for which specific functions are to be assigned at the preparedness stage, and which need to be usable under emergency conditions. "Emergency services" means the local off-site response organizations that are generally available and that perform emergency response functions. These may include police, firefighters and rescue brigades, ambulance services and control teams for hazardous materials. "Emergency worker" means a person having specified duties as a worker in response to an emergency including workers employed, both directly and indirectly, by registrants and licensees, as well as personnel of response organizations, such as police officers, firefighters, medical personnel, and drivers and crews of vehicles used for evacuation. "Extended Planning Distance (EPD)" means area around a facility for which emergency arrangements are made to conduct monitoring following the declaration of a general emergency and to identify areas warranting emergency response actions to be taken off the site within a period following a significant radioactive release that would allow the risk of stochastic effects among members of the public to be effectively reduced. "First responders" means the first team to respond at the site of a nuclear or radiological emergency. "Generic criteria (for emergency action)" means levels for the projected dose, or the dose that has been received, at which protective actions and other response actions are to be taken. "Hazard assessment" means assessment of hazards associated with facilities, activities or sources within or beyond the borders of a State in order to identify: (a) Those events and the associated areas for which protective actions and other response actions may be required within the State; (b) Actions that would be effective in mitigating the consequences of such events. "Helper in an emergency" means member of the public who willingly and voluntarily helps in the response to a nuclear or radiological emergency.

	"Ingestion and commodities planning distance (ICPD)" means area around a facility for which emergency arrangements are made to take effective emergency response actions following the declaration of a general emergency in order to reduce the risk of stochastic effects among members of the public and to mitigate non-radiological consequences as a result of the distribution, sale and consumption of food, milk and drinking water and the use of commodities other than food that may have contamination from a significant radioactive release. "Inner cordoned off area" means an area established by first responders in an emergency around a potential radiation hazard, within which protective actions and other emergency response actions are taken to protect first responders and members of the public from possible exposure and contamination. "Non-radiological consequences" means adverse psychological, societal or economic consequences of a nuclear or radiological emergency or of an emergency response affecting human life, health, property or the environment. "Notification" means: (1) A report submitted promptly to a national or international authority providing details of an emergency or a possible emergency. (2) A set of actions taken upon detection of emergency conditions with the purpose of alerting all organizations with responsibility for emergency response in the event of such conditions. "Operator" includes an authorized person or a person holding authorization as provided in the Act. "Operational criteria (or triggers)" means values of measurable quantities or observable conditions to be used in the response to a nuclear or radiological emergency in order to determine the need for appropriate protective actions and other response actions. . "Operational intervention level (OIL)" means a set level of a measurable quantity that corresponds to a generic criterion, typically expressed in terms of dose rates or of activity of radioactive material released, time integrated air activity concentrations, ground concentrations, or activity concentrations of radionuclides in environmental, food or water samples. "Precautionary action zone (PAZ): means an area around a facility for which emergency arrangements have been made to take urgent protective actions in the event of a nuclear or radiological emergency to avoid or to minimize severe deterministic effects off the site. Protective actions within this area are to be taken before or shortly after a release of radioactive material or an exposure, on the basis of prevailing conditions at the facility. "Preparedness stage" means the stage or phase at which arrangements for an effective emergency response are established prior to a nuclear or radiological emergency. "Projected dose" means the dose that would be expected to be received if planned protective actions were not taken.

	"Protective action" means an action for the purposes of avoiding or reducing doses that might otherwise be received in an emergency exposure situation or an existing exposure situation. The action may include: (i) early protective action - a protective action in the event of a nuclear or radiological emergency that can be implemented within days to weeks and still be effective such as relocation and longer-term restriction of the consumption of food potentially affected by contamination. (ii) mitigatory action – an immediate action by the operator or other party: (a) To reduce the potential for conditions to develop that would result in exposure or a release of radioactive material requiring emergency response actions on the site or off the site; or (b) To mitigate source conditions that may result in exposure or a release of radioactive material requiring emergency response actions on the site or off the site. (iii) urgent protective action - a protective action in the event of a nuclear or radiological emergency which must be taken promptly (usually within hours to a day) in order to be effective, and the effectiveness of which will be markedly reduced if it is delayed. Includes iodine thyroid blocking, evacuation, short term sheltering, actions to reduce inadvertent ingestion, decontamination of individuals and prevention of ingestion of food, milk or drinking water possibly with contamination. The urgent protective action is an urgent protective action taken before or shortly after a release of radioactive material, or an exposure, on the basis of the prevailing conditions to avoid or to minimize severe deterministic effects. "Radiological assessor" means a person or team who in the event of a nuclear or radiological emergency assists the operator or off-site response organizations by performing radiological surveys, performing dose assessments, controlling contamination, ensuring the radiation protection of emergency workers and formulating recommendations on protective actions and other response actions. "Reference level" for an emergency exposure situation or an existing exposure situation, the level of dose, risk or activity concentration above which it is not appropriate to plan to allow exposures to occur and below which optimization of protection and safety would continue to be implemented. "Security Plan" means a document prepared by the operator that presents a detailed description of the security arrangements in place at an associated facility or in connection with an associated activity "Significant transboundary release" means a release of radioactive material to the environment that may result in doses or levels of contamination beyond national borders from the release which exceed generic criteria for protective actions and other response actions, including food restrictions and restrictions on trade. "Site area" a geographical area that contains an authorized facility, authorized activity or source, and within which the management of the authorized facility or authorized activity or first responders may directly initiate emergency response actions. "on-site (area)" means an area within the site area. "off-site (area)" means as area outside the site area.

	"Stochastic effect" means radiation induced health effect, the probability of occurrence of which is greater for a higher radiation dose and the severity of which (if it occurs) is independent of dose effects may be somatic or hereditary, and generally occur without a threshold level of dose "Transnational emergency" means a nuclear or radiological emergency of actual, potential or perceived radiological significance for more than one State. "Urgent protective action planning zone (UPZ)" means an area around a facility for which arrangements have been made to take urgent protective actions in the event of a nuclear or radiological emergency to avert doses off the site in accordance with international safety standards. Protective actions within this area are to be taken on the basis of environmental monitoring — or, as appropriate, prevailing conditions at the facility. "Warning point" means a designated organization to act as a point of contact that is staffed or able to be alerted at all times for promptly responding to, or initiating a response to, an incoming notification, warning message, request for assistance or request for verification of a message, as appropriate, from the International Atomic Energy Agency (IAEA).
Objective	3 (1) These Regulations establish requirements: (a) for an adequate level of preparedness and response for a nuclear or radiological emergency; and (b) to mitigate the consequences if such an emergency arises despite all efforts made to prevent it. (2) They aim to align with global standards on Emergency Preparedness and Response to nuclear or radiological emergencies
Scope	4. These Regulations shall apply to preparedness and response to a nuclear or radiological emergency in relation to all those facilities and activities and sources or materials which are categorized as dangerous materials warranting protective and other response actions.
Application	5.These Regulations apply to preparedness and response for a nuclear or radiological emergency and to provide for a coordinated and integrated approach with security plans.
	PART II: GENERAL REQUIREMENTS
Emergency management system	6 (1) The operator shall take all reasonably practical measures to prevent nuclear or radiological emergencies and to mitigate their consequences if emergencies would occur.

	(2) The operator shall make arrangements for effective, prompt and adequate compensation of victims for damage due to a nuclear or radiological emergency, in line with the existing national liability regime and arrangements. (3) The operator shall establish an emergency management system for preparedness and response commensurate with the results of the hazard assessment. (4) The on-site emergency management system shall be designed to enable an effective emergency response to all postulated events, including very low probability events. (5) The on-site emergency management system shall be integrated with the off-site emergency management system of local and national authorities.
Roles and Responsibilities	7(1) The operator shall: (a) perform and periodically review a hazard assessment with consideration of full range of postulated events, including those not considered in the design; (b) prepare, review, revise, test and implement an on-site emergency plan quarterly, based on the hazard assessment; (c) establish and maintain on-site preparedness, response for facilities or activities and onsite emergency plan under its responsibility, in order to ensure a timely, managed, controlled, coordinated and effective response in case of a nuclear or radiological emergency. (d) promptly take necessary mitigatory and protective actions on the site in response to a nuclear or radiological emergency. (2) The operator shall establish the on-site emergency preparedness and response arrangements by the time the source is brought to the site and shall test them by means of an emergency exercise before the commencement of operation of a new facility or activity. (3) The operators of facilities in Emergency Preparedness Category (EPC) I shall test the on-site plan and Emergency Preparedness Response (EPR) arrangements by means of a full-scale national emergency response exercise. (4) The operator shall ensure that the on-site emergency plan and EPR arrangements are integrated with those of other response organizations at local, regional and national levels and with contingency plans, as appropriate, and with the relevant security plans.
Hazard Assessment	8 (1) The operator shall perform hazard assessment before commencement of activities and quarterly review it, in order to ensure that all situations that could necessitate an emergency intervention are identified. (2) The full range of postulated events shall be considered in the hazard assessment, including emergencies involving a combination of a nuclear or radiological emergency with a conventional emergency. The hazard assessment shall include consideration of: (a) events or activity that could affect the facility; (b) events involving a combination of a nuclear or radiological emergency with a conventional emergency that may affect wide areas and/or impair the

	infrastructure and capabilities to provide support in the emergency response, the availability of instruments, lighting and means of communication, as well as the safety of emergency workers (c) events that could affect several facilities and activities concurrently and the interactions among the facilities and activities affected. (3) The nature and extent of emergency arrangements for preparedness and response shall be commensurate with the potential magnitude and nature of the identified hazards associated with the facility or activity. (4) Based on the results of the hazard assessment, the operator shall assign its facility or activity to belong to one of the EPC described in Table 1, Schedule 1. (5) For facilities in EPC I or II, the operator shall perform a probabilistic safety analysis as part of the hazard assessment, in order to assess the adequacy of the on-site emergency response arrangements. (6) In the preparedness phase, for facilities and activities in EPC III and IV a comprehensive safety analysis shall be carried out by the operator to identify all sources of exposure and to evaluate radiation doses that could be received by workers and the public, as well as potential effects on the environment. (7) The safety analysis shall include event sequences that may lead to an emergency. (8) For all facilities and activities, the non-radiation related hazards to people on and off the site which are associated with the facility or activity including but not limited to toxic chemicals shall be identified in the hazard assessment. (9) The operator shall ensure that the hazard assessment includes consideration of the results of threat assessments for nuclear security purposes. (10) When performing the hazard assessment, the operator shall identify on-site and off-site areas for which any of the following protective actions may be required in case of a nuclear or radiological emergency: (a) precautionary urgent protective actions to avoid or to minimize severe deterministic effects by keeping doses below levels approaching the generic criteria in Schedule 2, Table 1 at which urgent protective actions and other response actions are to be taken under any circumstances; (b) urgent protective actions and other response actions to avoid or to minimize severe deterministic effects and to reduce the risk of stochastic effects Schedule 2, Table 2; (c) early protective actions and other response actions Schedule 2, Table 3; (d) other emergency response actions such as longer-term medical actions Schedule 2, Table 4 and emergency response actions aimed at enabling the termination of the emergency; and/or (e) protection of emergency workers Schedule 3. (11) For facilities in EPC I and II, the operator shall set-up the radii of the off-site areas for taking precautionary urgent protective actions, urgent protective actions, early protective actions and other response actions in an emergency, as part of the hazard assessment. (12) The operator shall propose these radii and shall justify them to the Authority. (13) The radii shall be included in the on-site emergency plan and shall be consistent with the radii adopted by the off-site response organizations.

	(14) After commencement of operational activities, the operator shall conduct a periodical review of the hazard assessment every 2 years and/or whenever the conditions related to the facility or activity change in a way that the hazard assessment needs to be updated. (15) Any change in the hazard assessment shall be notified to the Authority for approval. (16) The operator shall appropriately revise the emergency arrangements: (a) prior to any change in the facility or activity that may impact the existing hazard assessment including but not limited to movement of irradiated reactor fuel to a new location, change in weather and climatic conditions and; (b) when new information becomes available that provides insights into the adequacy of the existing arrangements. (17) The operator shall notify the Authority and any other relevant organization of any change of emergency arrangements to integrate all needed changes with the off-site emergency arrangements at local and national level.
Protection Strategy	9(1) The operator shall develop at the preparedness stage an on-site protection strategy with set of protective actions for protecting the public and personnel inside the facility and for protection of the emergency workers performing response actions on the site. (2) The on-site protection strategy shall include sets of protective actions which have to be implemented in case of accident, so that the residual doses for the public on the site will be kept as low as reasonably achievable, below the reference level. (3) The on-site protection strategy shall be based on the same reference level and generic criteria as the off-site protection strategy. As triggers for implementing the set of protective actions, the generic criteria and associated operational intervention levels included in Schedule 2, Tables 1-4 shall be applied. (4) The set of on-site protective actions shall be justified and optimized, at the preparedness stage and during the response to an emergency, with due account to radiation detriments and also to non-radiological consequences having impact on public health, the economy, society and the environment. (5) The operator shall establish arrangements to assess the effectiveness of the on-site protective actions taken and adjust them based on prevailing conditions and available information during an emergency and to revise the on-site protection strategy according to actual situation. (6) Provision of criteria to discontinue on-site protective actions and other response actions, when they are no longer justified, shall be established at the preparedness stage and applied during the response to a nuclear or radiological emergency. (7) When developing the on-site protection strategy, the following shall be considered for justification and optimization purposes: (a) nature of the event, potential consequences and radiation doses on the site; (b) event's timings and dynamics in evolution (urgency of protective actions implementation, prioritization, time needed for implementation, coordination with the local off-site emergency response actions);

	(c) availability of resources, including: (i) emergency workers and their availability; (ii) availability of roads, communication means, transportation means and other infrastructure elements; (iii) number of people to be evacuated; (iv) availability of stable Iodine tablets, if appropriate; (v) availability of personal monitoring, environmental monitoring and decontamination tools and devices; (vi) systems for registration; (vii) means to provide first aid and initial medical treatment for the injured personnel; (viii) means to provide protection for the emergency workers on the site, etc.); and (d) social and psychological factors, which includes family separation or normal life disruption. (8) The operator shall assist at the preparedness stage in the development of the off-site protection strategy by ensuring that all relevant information in terms of scenarios, source terms and projected doses is available to relevant off-site response organizations at local, regional and/or national level, as appropriate. (9) The operator shall ensure that the on-site protection strategy is harmonized with the off-site protection strategy. (10) The operator shall have arrangements in place to provide the off-site response organizations with relevant information and actions for the implementation and optimization of the protection strategy during the response to a nuclear or radiological emergency. (11) For facilities in EPC I and II, in the urgent phase of an accident the operator shall select the appropriate off-site protection strategy and recommend to the local decision makers the protective actions for the population within the emergency planning zones. (12) According to accident progression or facility status evolution, the operator shall revise the on-site protection strategy and shall optimize the recommendations on off-site protective actions whenever significant changes occur.
	PART III: PLANNING BASIS
Concept of Operations	10. For all facilities and activities, the operator shall briefly describe in the on-site emergency plan the intervention actions in chronological order and the evaluation work which constitute the response of its own emergency organization in the context of the general response.
Emergency Classification	11 (1). The operator shall make arrangement for promptly classifying, on the basis of the hazard assessment, a nuclear or radiological emergency warranting protective actions and other response actions to protect workers, emergency workers, members of the public, in accordance with the protection strategy.

	(2). The operator shall apply the following emergency classification system to initiate the response and the implementation of emergency operations, including mitigatory actions, urgent protective actions and the emergency protection of workers: (a) General emergency at facilities in EPC I or II for an emergency that warrants taking precautionary urgent protective actions and early protective actions and other response actions on the site and off the site. Upon declaration of this emergency class, appropriate actions shall promptly be taken, on the basis of the available information relating to the emergency, to mitigate the consequences of the emergency on the site and to protect people on the site and off the site; (b) Site area emergency at facilities in EPC I or II for an emergency that warrants taking protective actions and other response actions on the site and in the vicinity of the site. Upon declaration of this emergency class, actions shall promptly be taken: (i) to mitigate the consequences of the emergency on the site and to protect people on the site; (ii) to increase the readiness to take protective actions and other response actions off the site if this becomes necessary on the basis of observable conditions, reliable assessments and/or results of monitoring; and (iii) to conduct off-site monitoring, sampling and analysis; (c) Facility emergency at facilities in EPC I, II or III for an emergency that warrants taking protective actions and other response actions at the facility and on the site but does not warrant taking protective actions off the site. Upon declaration of this emergency class, actions shall promptly be taken to mitigate the consequences of the emergency and to protect people at the facility and on the site. (d) Alert at facilities in EPC I, II or III for an event that warrants taking actions to assess and to mitigate the potential consequences at the facility. Upon declaration of this emergency class, actions shall promptly be taken to assess and to mitigate the potential consequences of the event and to increase the readiness of the on-site response organizations. (e) Other nuclear or radiological emergency an emergency in EPC IV that warrants taking protective actions and other response actions at any location. Upon declaration of this emergency class and the level of emergency response, the operator shall take prompt actions to mitigate the consequences of the emergency on the site, to protect those in the and to determine where and for whom protective actions and other response actions are warranted. (3) The emergencies provided for in 11(2)(a)-(d), classes shall be used for facilities in EPC I and II. (4) For facilities in EPC III, emergencies provided for in Regulation 11(2) Paragraph (c) and (d) emergency classes are applicable. (5) For activities in EPC IV, Regulation 11(2) Paragraph (c) emergency class applies.
On-site Areas and Emergency Planning Zones	12 (1). The operator, shall establish an on-site area for all facilities and activities, defined as the area under its immediate control.

	(2) For facilities in EPC I, II and III the on-site area is the area surrounding the facility within the security perimeter, fence or other designated property marker. (3) For activities in EPC IV the on-site area is the controlled area around a radioactive source or a contaminated zone. (4) For transport accidents or emergencies involving uncontrolled radioactive sources or localized contamination, the operator shall establish an on-site area at the onset of the emergency. (5) The operator is responsible to prepare for and respond to a nuclear or radiological emergency inside the on-site area. (6) At the preparedness stage, the operator of facilities in EPC I and II shall propose the appropriate radii of the emergency planning zones off the site, for which detailed planning shall be prepared for implementing urgent and early protective actions and other response actions in case of a nuclear or radiological emergency. (7) The proposed emergency planning zones shall be submitted to the Authority for review and approval. (8) The following emergency planning zones and distances shall be established by the operator: (a) A Precautionary Action Zone (PAZ), for facilities in EPC I, for which arrangements shall be made for taking urgent protective actions and other response actions, before any significant release of radioactive material occurs, on the basis of conditions at the facility, leading to the declaration of a general emergency in order to avoid or to minimize severe deterministic effects; (b) An Urgent Protective action planning Zone (UPZ), for facilities in EPC I and II, for which arrangements shall be made to initiate urgent protective actions and other response actions, if possible before any significant release of radioactive material occurs, on the basis of conditions at the facility (i.e. conditions leading to the declaration of a general emergency), and after a release occurs, on the basis of monitoring and assessment of the radiological situation off the site, in order to reduce the risk of stochastic effects; (c) An Extended Planning Distance (EPD) from the facility, for facilities in EPC I and II, which is the area beyond the urgent protective action planning zone for which arrangements shall be made to conduct monitoring and assessment of the radiological situation off the site in order to identify areas within such a period of time as would allow the risk of stochastic effects to be reduced effectively by taking protective actions and other response actions within a day to a week and a month following a significant release; (d) An Ingestion and Commodities Planning Distance (ICPD) from the facility, for facilities in EPC I and II, is the area beyond the extended planning distance for which arrangements shall be made to take response actions for protecting the food chain and water supply as well as for protecting commodities other than food from contamination following a significant release and for protecting the public from the ingestion of food, milk and drinking water and from the use of commodities other than food with possible contamination following a significant release.

	(9) For activities in EPC IV, the operator shall establish two distinct areas where the intervention shall be carried out in case of emergency: the inner and the outer cordoned area. (a) the inner cordoned area, defined as the safety perimeter which delimitates the radioactive contaminated area and (b) the outer cordoned area, defined as the security perimeter which delimitates the area with controlled access surrounding the radioactive contaminated area. (10) During emergency situations involving activities in EPC IV, it is the responsibility of the operator to establish the security perimeter containing the inner and outer cordoned areas, by using the sizes and/or criteria presented in Schedule 4, depending on the emergency situation.
	PART IV: FUNCTIONAL REQUIREMENTS
Managing Operations in an Emergency Response	13 (1). In case of emergency, the operator shall: (a) promptly execute and manage the on-site emergency response without impairing the performance of the continuing operational safety and security functions both at the facility and at any other facilities on the same site; (b) clearly specify and effectively make the transition from normal operations to operations under emergency conditions on the site area; (c) designate the responsibilities of all personnel who would be on the site in an emergency, as part of the arrangements for the transition. (2) The operator shall have in place a clearly specified command and control s system for emergency response, which shall establish: (a) the responsibility for making decisions on on-site emergency response actions, including the discharge of responsibility; (b) the authority and responsibility for directing the on-site emergency response, including the transfer of responsibility; (c) effective coordination of the on-site and off-site response actions. (3) After the declaration of an emergency, the command-and-control system shall be immediately activated on the site and directed by a single clearly designated emergency manager. (4) The on-site command and control system shall be responsible also for the allocation of resources and the assessment of needs in terms of resources, for performing the on-site mitigatory, protective and other response actions. (5) For all facilities and activities, the transition from normal operations to emergency operations shall be clearly addressed in the on-site emergency plan and relevant emergency procedures and the responsibilities of all persons who would be on the site or at the scene of an emergency shall be designated as part of the arrangements for the transition. (6) The operator shall make arrangements in order to ensure that the on-site emergency response is effectively managed and coordinated with the off-site

	response at local, regional and national level to a conventional emergency and to a nuclear security event. (7) Arrangements have to be made so that the facility or activity has a nuclear security system or systems in place that would be functional in a nuclear or radiological emergency. (8) The operator of facilities in EPC I and II, where several facilities are collocated on the same site, shall ensure that adequate arrangements are in place on the site to manage the emergency response at all the facilities if each of them is under emergency conditions simultaneously. (9) For facilities in EPC I and II, the operator shall ensure that the transition to the emergency response and the performance of initial response actions do not impair the ability of the operational staff to follow the procedures needed for safe operations and for taking mitigatory actions. (10) In the beginning of the emergency, for facilities in EPC I the shift supervisor shall act as emergency manager, until the whole command and control system is activated. (11). The operator shall make arrangements as far as practicable, so that the on-site safety measures and response actions can be performed in case of emergency without compromising the functionality of existing on-site nuclear security systems.
Identification and notification of emergency and activation of response	14.(1) In the event of a measurable condition or identifiable circumstance identified by the operator that necessitate an emergency response, the operator shall promptly determine and declare the appropriate emergency class by using the classification system described in Part III and shall initiate the appropriate on-site actions. (2) In the preparedness phase, the operator shall establish Emergency Action Levels (EALs) for the classification of emergencies that relate to abnormal conditions for the facility or activity concerned, security related concerns, releases of radioactive material, environmental measurements and other observable indications. (3) The operator shall develop EALs for each emergency class. The EALs shall be submitted for approval to the Authority and afterwards included in the on-site emergency plan and in the operating procedures of the facility or activity. (4) For facilities in EPC I, II or III, arrangements shall be made to review the emergency class in the light of any new information and, as appropriate, to revise it. Criteria for changing the emergency classification shall be established at the preparedness stage. The criteria shall consider both facility conditions and off-site radiological conditions. The accident classification schemes shall be included in the on-site emergency plan. (5) For facilities in EPC I and II, the operator shall assess, classify and declare the emergency within 15 minutes after the operator has the indication that an EAL has been met or exceeded. (6) For all facilities and activities, immediately after declaration of the emergency situation, the operator shall notify the Authority and other public organizations, according to the provisions included in the on-site emergency response plan.

	(7) The operator shall provide sufficient and periodically updated information, at least at every 30 minutes, to the off-site response organizations, in accordance with the development of the emergency. (8) For facilities in EPC I and II the notification form shall include as a minimum the time of event occurrence, type of the event, emergency class, basis for classification, operational status, short event description, meteorological conditions on the site, radiological conditions on the site, protective actions recommended for the population in the EPZs, the person who is in charge for emergency management. (9) For facilities in category III and IV, in the event of loss of a radioactive source or of loss of control over a radioactive source, the operator remains liable for the recovery of the source. The operator shall include at least the following information during notification: radionuclide, the activity, the identification number of the source, type and identification number of the source container and a detailed description of the relevant events leading to the loss or loss of control. (10) In case of general emergency at facilities in EPC I and II, together with the first notification of the emergency, the operator shall provide the local authorities with recommendations for protective actions to the population located in the emergency planning zones, according to the off-site protection strategy developed at the preparedness stage. (11) The operator of facilities and activities shall have a person on the site at all times with the following authority and responsibilities: to classify a nuclear or radiological emergency and upon classification promptly and without consultation to initiate an appropriate on-site response, to notify the appropriate off-site public authorities and to provide sufficient information for an effective off-site response. (12) The operator shall provide the person referred to in paragraph (11) with suitable means of alerting on-site response personnel and notifying the off-site public authorities and also is responsible for: (a) the early prediction or assessment of the extent and significance of any unplanned discharge of radioactive substances to the environment or exposures; (b) rapid and continuous assessment of the nuclear or radiological emergency as it proceeds; and (c) determining the need for protective actions for the public and workers. (13) The responsibilities of the response personnel have to be clearly assigned and addressed in the on-site emergency plan and relevant emergency procedures for each class of emergency. (14) For all facilities and activities, the operator shall establish notification point(s) where from to initiate notification and exchange information of an actual or potential nuclear or radiological emergency. (15) The notification point(s) shall be provided with communication means and connections with the off-site response organizations designated to have specific tasks as addressed in the on-site and relevant off-site emergency response plans. (16) The operator shall ensure that the notification point (s): (a) is/are maintained continuously and available to receive any notification or request for support and to respond promptly or to initiate a preplanned and

	coordinated off-site response appropriate to the emergency class or the level of emergency response; (b) have immediate communication with the response organizations that are providing support using suitable, reliable and diverse means of communication. (17) Sufficient personnel shall be designated by the operator of facilities and activities to perform the notification and initial response actions. (18) The operator shall establish an 'on call' system for activating the emergency personnel and shall have in place appropriate means and procedures to reach pre-defined critical persons 24 hours a day. (19) For facilities in EPC I and II, the notification point(s) shall have direct and immediate communication with the authority assigned the responsibility to decide on and to initiate precautionary urgent protective actions and urgent protective actions off the site. (20) The operator shall make arrangements, at facilities and locations where there is a significant likelihood of encountering a dangerous source that is not under control, to ensure that the on-site managers of operations and other personnel are aware of the indicators of a potential radiological emergency, the appropriate notification, and protective actions and other response actions warranted immediately in an emergency. (21) In the event of loss of a radioactive source or of loss of control over a radioactive source, the operator remains liable for the recovery of the source. (22) In case of a situation referred to in Paragraph 21 above, the operator shall notify with undue delay the loss of a radioactive source or the loss of control over a radioactive source to the Authority and to relevant organizations to enable comprehensive investigations to recover the radioactive source. (23) The operator shall include the following information as a minimum: the radionuclide, the activity, the identification number of the source, type and identification number of the source container and a detailed description of the relevant events leading to the loss or loss of control.
Mitigation Actions	15. (1) During emergencies, the operator shall promptly decide on, and take the actions necessary to mitigate the consequences of a nuclear or radiological emergency involving a facility or activity under its responsibility. (2) In the preparedness phase, the operator shall make arrangements to promptly mitigate the consequences of an emergency. (3) Whenever off-site support is identified as needed, the operator shall initiate and establish written agreements and protocols for receiving the support of off-site emergency services, which includes police, medical or firefighting services. (4) For facilities and activities in EPC III and IV, the operators shall ensure that arrangements are in place for receiving on the site technical expertise in radiation protection from off-site organizations. (5) Arrangements shall be in place on the site so that the off-site support personnel shall be afforded prompt access to the facility and shall be informed of on-site conditions and the necessary protective actions. (6) For facilities in EPC I, II and III arrangements shall be made in the planning phase for taking actions to:

	(a) prevent an escalation of the emergency, (b) return the facility to a safe and stable state, (c) ensure the continued functionality of nuclear security systems, (d) reduce the potential for releases of radioactive material or exposures and (e) mitigate the consequences of any actual releases or exposures. (7) In these arrangements, the operator shall take into account the following aspects of the emergency response: (a) the operational actions necessary; (b) the operational information needs; (c) the workload and conditions of the operating personnel including the control room; (d) the response actions necessary in the facility; (e) the conditions in the facility, and where appropriate the conditions in the vicinity of the facility, in which response actions are necessary; (f) the response of the personnel, instrumentation and structures, system and components of the facility under emergency conditions; and (g) the continued functionality of nuclear security system(s). (8) The arrangements shall include emergency operating procedures and guidance for the operator on mitigatory actions for the full range of postulated emergencies. (9) For facilities in EPC I and II, the operator shall establish severe accident management guidelines. (10) For facilities in EPC I, II or III the operator shall provide technical assistance to the operational staff. Teams for mitigating the consequences of an emergency, including damage control and firefighting, shall be available and shall be prepared to perform actions on the site. Any equipment necessary in response shall be placed at the most suitable location to ensure its ready availability at the time of need and to allow human access in the anticipated emergency conditions or environmental conditions. (11) The on-site personnel directing mitigatory actions shall be provided with an operating environment, information and technical assistance that allow them to take effective action to mitigate the consequences of the emergency. (12) As part of the planning, the operator of an activity in EPC IV using a dangerous source shall make arrangements to respond promptly to an emergency involving the source in order to mitigate any consequences. (13) Arrangements shall include the initiation of a prompt search and issuing a warning to the public in the case when the dangerous source is lost or illicitly removed and possibly being in the public domain. (14) To support the response, the operator shall include protocols for prompt access to a radiation protection specialist who is trained and qualified to assess the emergency and to mitigate any consequences.

Urgent Preventive and Other Response Actions	16 (1) In case of emergency, the operator shall take all appropriate measures to save lives and shall take urgent protective actions on the site in order to prevent the occurrence of severe deterministic health effects and to avert doses to the extent practicable, in line with the on-site protection strategy. (2) The on-site urgent protective actions shall be revised as appropriate to take into account any new information relating to the emergency that becomes available or the previous one is no longer justified. (3) The operator of an activity in EPC IV shall take all necessary actions and support emergency services to save lives or to prevent serious injury on the site and/or on scene, whenever an immediate threat to life of a person is perceived. (4) At the preparedness stage, the operator shall establish arrangements to assess the magnitude and likely development of emergency conditions initially and throughout the emergency and to take urgent protective actions and other response actions effectively in a nuclear or radiological emergency, in line with the on-site protection strategy. (5), The operator of a facility in EPC I, II and III shall make the following arrangements, in order to ensure the safety of all persons on the site: (a) notify the staff on the site of an emergency; (b) take appropriate actions for all persons on the site, immediately upon notification of an emergency; (c) accounting for those on the site; (d) locating and recovering those unaccounted for; (e) take urgent protective actions; and (f) provide immediate first aid. (6) In addition to paragraph 5, the operator shall ensure availability of: (a) suitable assembly points for all persons on the site; (b) sufficient number of safe evacuation routes, clearly and durably marked, with reliable emergency lighting, ventilation and other building services essential to the safe use of these routes; and (c) suitable alarm systems and means of communication so that all persons present in the facility and on the site could be warned and instructed, even under emergency conditions; (d) means of communication with off-site officials responsible for the implementation of protective actions and other response actions off the site. (7) In the planning phase, the operator of a facility in EPC I, II or III shall make arrangements to assess promptly: (a) abnormal conditions at the facility; (b) exposures and releases of radioactive material; (c) radiological conditions on and off the site; and (d) any actual or potential exposures of the public. (8) The assessments provided for in paragraph 7 shall be used: (a) for mitigatory actions taken by the operating personnel;

(b) as a basis for determining the emergency action levels and for emergency classification;

(c) for urgent protective and other response actions to be taken on the site;

(d) for the protection of workers; and for

(e) formulating recommendations for urgent protective actions and other response actions to be taken off the site.

(9) The operator shall make arrangements to include access to instruments displaying or measuring parameters that can readily be measured or observed in a nuclear or radiological emergency and which form the basis for the emergency action levels (EALs) used to classify emergencies. The expected response of instrumentation and structures, systems and components at the facility under emergency conditions shall be taken into account.

(10) These shall also include arrangements for promptly conducting environmental monitoring within the emergency planning zones and promptly assessing the results of the monitoring on the basis of predetermined operational intervention levels in Schedule 2.

(11) The operator shall establish arrangements for a proper use and sharing of monitoring results, data analysis and provision of relevant information with relevant off-site response organizations, for decision making.

(12) For facilities and activities in EPC III and IV, the operator shall make arrangements to assess promptly the extent and/or the significance of any abnormal conditions on the site, any exposures or any contamination.

(13) The arrangements shall include conducting radiation monitoring on the site and/or at the scene.

(14) These assessments shall be used:

(a) for initiating the mitigatory actions,

(b) as a basis for protective and other response actions to be taken on the site;

(c) to identify members of the public who could potentially be exposed; and

(d) to communicate the extent of the hazard and the recommended protective actions and other response actions to the appropriate off-site response organizations.

(15) The operator of a facility in EPC I and II, in case of general emergency, shall be responsible to provide to off-site officials the recommendations for taking urgent protective actions within the emergency planning zones and distances, in line with the off-site protection strategy.

(16) The recommendations shall be formulated and sent to off-site officials immediately after the declaration of emergency, together with the early notification of the event.

(17) The recommendations shall be revised throughout the emergency, with due consideration of accident progress and of the impact produced by protective actions implementation.

(18) In the planning phase, for a facility in EPC I or II arrangements shall be made to assess emergency conditions including radioactive releases, levels of radioactivity on the site, meteorological conditions, source term estimation and provide for recommendations and any necessary revision of these prior to their implementation, to take account of factors that may affect the implementation of

	protective and other response actions and any exposures or results of environmental monitoring following a release of radioactive material. (19) A single position shall be assigned on the site at all times, as part of the emergency organization of the facility, with the authority and responsibility to promptly recommend protective and other response actions to the off-site notification points upon the declaration of a nuclear or radiological emergency. (20) In the planning phase, for facilities in EPC I or II the operator shall be responsible to make arrangements for promptly assessing contamination, releases of radioactive material and doses within emergency planning zones and distances, for the purpose of deciding on or adjusting the protective and other response actions that have been taken. (21) These shall include arrangements for promptly conducting environmental monitoring within the emergency planning zones and distances and promptly assessing the results of the monitoring on the basis of predetermined operational intervention levels. (23) Arrangements shall be established for a proper use of monitoring results, data analysis and provision of relevant information for decision making. (24) In the planning phase, the operator of activities in EPC IV shall establish emergency procedures and/or instructions on taking urgent protective actions and other response actions in accordance with national generic criteria Schedule 2, Table 1 (25) Emergency procedures and/or instructions shall: (i) be based on hazard assessment and developed concept of operations for the specific activity in EPC IV; (ii) include the approximate radius of the inner cordoned area in which urgent protective and other response actions should initially be taken and its adjustment based on observed or assessed conditions at the scene. (26) The roles and responsibilities of the operator in recommending urgent protective and other response action to the on-scene response organizations shall be clearly addressed in the emergency response plan and other relevant documents, including local off-site emergency response plan, protocols with local authority and agreements. (27) The operators of facilities and activities shall make arrangements to ensure that relevant information is recorded during an emergency and retained for use during the emergency, in evaluations conducted following the emergency and for the long-term health monitoring and follow-up of the emergency workers and members of the public who may potentially be affected.
Instructions and Warning to the Public	17 (1) Upon declaration of an emergency, the operator of a facility in Emergency EPC I or II shall promptly coordinate with local authorities the warning of permanent, transient and special population groups in the emergency planning zones and distances and providing them information on the nature of the hazard and immediate actions that they should take in order to protect themselves, without any undue delay that could jeopardize the effectiveness of the protective actions. (2) In a joint and coordinated manner with the relevant off-site response organizations, the operator shall provide the general public and mass-media with

	useful, timely, truthful, consistent and appropriate information on the type of emergency which has occurred, extent and probable development, advice on health protection actions. (3) The operator shall promptly respond to any enquiries from the public and from news and information media during response to an emergency. (4) For facilities in EPC I or II, the arrangements for alarming the population resident in the emergency planning zones shall include the installation and maintenance of sirens and warning systems in the emergency planning zones and the elaboration of instructions in the main languages spoken in these zones on immediate protective and other actions to be taken. (5) The operator shall work closely and shall coordinate with the relevant off-site local authorities, when establishing these arrangements. (6) The operator of a facility in EPC I or II shall describe in the on-site emergency response plan the arrangements perfected with the local authorities and its own actions, that has resulted from the collaboration protocol on the information, warnings and instructions, prior to and during the emergency, of the population in the emergency planning zones. (7) The on-site emergency response plan shall describe the material resources and the warning systems used by the operator of a facility in EPC I or II for warning, instruction and information of the population in the emergency planning zones. (8) During planning phase, the operator shall establish arrangements to provide the general public with information on the risks posed by facility or activity, on initial response and on immediate protective actions in case of nuclear or radiological emergency, through educational campaigns. (9) The arrangements provided in Paragraph 8 above, shall be commensurate with the radiological risk perceived for the respective facility or activity and shall be established in cooperation with relevant off-site response organizations responsible for public information. (10) The operator shall organize educational campaigns to provide public and mass-media with information on the risks posed by facility or activity, before operation and periodically throughout the lifetime of a facility or duration of the activity, on initial response and on immediate protective actions in case of nuclear or radiological emergency. (11) The operator shall coordinate with relevant off-site response organizations, in educational campaigns provided in Paragraph 10 above. (12) For facilities in EPC III or IV, the operator shall make arrangements to warn the population in the affected area, for those situations which may need such actions, in order to identify and locate people who may have been affected by a nuclear or radiological emergency and who may need response actions such as decontamination, medical examination or health screening. (13) The arrangements provided for in Paragraph 12 above, shall be commensurate with the radiological risk perceived for the respective facility or

	activity and shall be established in co-operation with relevant off-site local authorities responsible for public information. (14) These arrangements shall include arrangements for issuing a warning to the public and providing information in the event that a dangerous source could be in the public domain as a consequence of its loss or unauthorized removal. (15) The relevant arrangements for warning and providing instructions to the population in the affected area shall be included in the on-site emergency plan and relevant local arrangements.
Protecting Emergency Workers and Helpers	18 (1) The operator shall designate at the preparedness stage, to the extent practicable, its emergency workers and shall make arrangements for their initial and continuing health and fitness surveillance for their intended duties in a nuclear or radiological emergency. (2) In the planning phase, the operator shall anticipate and shall prepare for the hazardous conditions in which emergency workers may be required to perform response functions on the site. (3) In addition, the operator shall designate as emergency workers those who may undertake an intervention on the site to: (a) save lives or to prevent serious injury, including severe deterministic health effects; (b) take actions to avert a large collective dose; (c) take actions to prevent the development of catastrophic conditions. (4) The emergency personnel of police, fire-fighters, medical personnel and drivers and crews of evacuation vehicles acting on the site shall be designated also as emergency workers. (5) For facilities and activities in EPC III or IV, the radiation protection specialists who may respond on the site shall be designated as emergency workers. (6) The operator shall make arrangements at the preparedness stage to protect its emergency workers. (7) These arrangements shall include: (a) training those emergency workers designated as such in advance; (b) providing emergency workers not designated in advance in an emergency immediately before the conduct of their specified duties with instructions on how to perform the duties under emergency; (c) arrangements for managing, controlling and recording the doses received; (d) availability of appropriate specialized protective equipment and monitoring equipment, procedures and training for emergency response in the anticipated hazardous conditions; (e) provision of iodine thyroid blocking, as appropriate, if exposure due to radioactive iodine is possible; (f) arrangements to obtain informed consent to perform specified duties, when appropriate;

	(g) arrangements for medical examination, longer term medical actions and psychological counselling, as appropriate or when requested by emergency workers. (8) In addition, the operator shall make arrangements to register the doses received by its emergency workers during the intervention and to provide medical support appropriate for the doses they have received or at their request. (9) During emergencies, the operator shall be prepared to register and integrate into their on-site emergency operations those emergency workers not designated as such in advance and also helpers in an emergency. (10) Information on the doses received during the intervention and on any consequent health risks shall be recorded by the operator and communicated to the emergency workers and helpers in an emergency. (11) The operators shall provide its emergency workers and the helpers in an emergency with medical attention appropriate for the doses they have received in intervention. (12) During emergencies, the operator shall ensure that all practicable means are used to minimize exposures of emergency workers in the response to a nuclear or radiological emergency and to optimize their protection. (13) Where feasible, the system of radiological protection consistent with that for planned exposure situations shall be applied also for the emergency workers. (14) In life saving actions or actions to prevent deterministic effects or serious injuries or large collective doses, the exposure of emergency workers shall be optimized and shall be below a predetermined dose level appropriate to the type of task undertaken, in accordance with the criteria presented in Schedule 2 of this regulation. (15) For those identified response actions which could produce exposures for some workers higher than the dose limit for planned exposure situations, including lifesaving actions, actions to prevent deterministic effects, serious injuries or large collective doses; the selection of emergency workers shall be made on a volunteering basis. (16) In exceptional cases where an emergency worker has received an effective dose exceeding 200 mSv, the operator shall ensure that qualified medical advice is obtained before any further occupational exposure is incurred. (17) Helpers in an emergency shall not be allowed to take actions on the site that could result in their receiving doses in excess of an effective dose of 50 mSv. (18) For facilities in EPC I, II and III, the operator shall inform those off-site emergency workers coming on the site to support the intervention about the risks of radiation exposure and the meanings of radiation signs and placards. (19) The operator is responsible for the protection of the external emergency workers and shall have arrangements in place to provide them with personal protective equipment, when appropriate, and to control their radiation doses. (20) Arrangements shall be made at the preparedness stage to clearly address roles and responsibilities of the operator for the protection of helpers undertaking works on the site. (21) Once the emergency phase of an intervention has ended, workers undertaking recovery operations, such as the recovery of sources, repairs to the facility and buildings, waste disposal or decontamination of the site and surrounding area,

	shall be subject to the full system of detailed requirements for occupational exposure. (22) When the intervention has ended, the operator shall communicate to the emergency workers involved the doses received and the consequent health risk. (23) The person responsible within the operator for ensuring compliance with the current requirements for protecting the emergency workers undertaking an intervention on the site and helpers in an emergency, shall be specified in the on-site emergency plan and related emergency procedures. (24) The person referred to in Paragraph 23 above, shall be the contact person during Authority's inspections and other relevant regulatory activities related to the operator.
Management of Medical Response	19 (1) In case of emergency, the operator shall ensure the pre-treatment procedure of contaminated or overexposed workers, including first aid, estimation and reconstruction of radiation doses, medical transport and initial treatment of contaminated or highly exposed individuals in pre-designated medical facilities. (2) The operator shall ensure long term medical follow-up and treatment for those workers exposed to increased levels of radiation. (3) A registry shall be kept during emergency with all workers to be tracked and to receive first aid, specialized treatment and/or long-term medical follow up. (4) In the planning phase, the operator of facilities in EPC I, II or III shall arrange for a local medical facility to be used to treat a limited number of contaminated or overexposed workers, including arrangements for first aid, the estimation of doses, medical transport and the initial medical treatment of contaminated or highly exposed individuals in local medical facilities. (5) In addition, the operator shall make arrangements for the medical personnel and emergency staff of the above-mentioned medical facility to be aware of the appropriate notification procedures and other response actions warranted if a nuclear or radiological emergency has occurred or is suspected. (6) Arrangements shall be in place and criteria shall be established and included in the on-site emergency response plan for identification, tracking and long-term medical follow-up and treatment of the health effects for the personnel exposed to increased levels of radiation. (7) For activities in EPC IV, the operator shall ensure to the extent possible that medical assistance is provided to its workers when needed in emergency situations.
Communication with the Public	20(1) During a nuclear or radiological emergency, through official channels, the operator shall provide the public and mass-media with useful, timely, truthful, consistent and appropriate information on the type of emergency which has occurred, extent and probable development, initial response and advice on health protection actions. (2) The information shall be provided to the public in plain and understandable language, and jointly coordinated with the information provided by the local and national authorities. (3) The operator shall protect sensitive information in circumstances where a nuclear or radiological emergency is initiated by a nuclear security event.

	(4) The operator shall promptly and publicly identify and address concerns, misconceptions, and rumors as well as the consequence and risk of action beyond those that are warranted and shall promptly respond to any rumors or enquiries from the public and from media which might occur during an emergency. (5) In the planning phase, the operator shall prepare a communication strategy as part of the on-site protection strategy and shall make arrangements to provide the general public with information on the risks posed by facility or activity, on initial response and on immediate protective actions in case of nuclear or radiological emergency. (6) These arrangements shall include the elaboration of pre-defined press release statements and the periodically conduct of educational campaigns for informing the public and mass-media. (7) The arrangements shall include a system for putting radiological health hazards in perspective in a nuclear or radiological emergency, with due consideration to pregnant women, children and individuals who are most vulnerable with regard to radiation exposure.
Early Protective and Other Response Actions	21(1) In case of emergency, the operator shall be responsible to promptly assist the off-site response organizations with the information necessary to take decisions on early protective and other response actions off the site, by using the national generic and operational criteria Schedule 2. (2) The operator shall make arrangements at the preparedness stage to promptly assist off-site response organizations and the public to gain an understanding of radiological health hazards in a nuclear emergency in order to make informed decisions on protective actions. (3) The operator shall make arrangements to assess the magnitude of hazards and the possible development of hazardous conditions throughout a nuclear or radiological emergency in order to promptly identify, characterize or anticipate, as appropriate, new hazards or the extent of hazards and to support the revision of the off-site protection strategy. (4) The operator shall make arrangements to support the off-site response organization by conducting environmental radiation monitoring within the emergency planning zones and distances, and monitoring for contamination of vehicles, personnel and goods moving into and out the contaminated areas in order to control the spread of contamination. These arrangements shall clearly specify the operator's role and responsibilities and shall be based on the use of pre-established operational criteria in accordance with the off-site protection strategy Schedule 2.
Management of Radioactive Waste in an Emergency	22.(1) During a nuclear or radiological emergency, the operator shall be responsible to ensure the safe and effective management of radioactive waste arising in a nuclear or radiological emergency, including radioactive waste arising from associated protective and other response actions. (2) The national policy and strategy for radioactive waste management shall be considered by the operator when planning the management of radioactive waste generated in a nuclear or radiological emergency.

	(3) The radioactive waste arising from the emergency situation shall be managed in a manner that does not compromise the protection strategy, with account taken of prevailing conditions as these evolve. (4) In order to release materials from the regulatory control, the operator shall apply for and shall receive the approval of the Authority. (5) With respect to the materials released from the authorization regime, the operator shall submit to the purchaser, and, if applicable, to the carrier, the radiological monitoring certificate and the Authority's approval with respect to the removal of such materials from the site. (6) The recovered radioactive material or waste shall be transported for the purpose of temporary or final storage according to the national regulations applicable to transport of radioactive materials. (7) In the planning phase, the operator shall make arrangements for the safe and effective management of radioactive waste arising from an emergency. These arrangements shall include: (a) a plan to characterize waste, including in situ measurements and analysis of samples; (b) criteria for categorization of waste; (c) avoiding to the extent possible the mixing of waste of different categories; (d) minimizing the amount of material declared as radioactive waste; (e) method for determining appropriate options for storage, predisposal management and disposal; (f) a plan for the long-term management of waste; (g) considerations of non-radiological aspects of waste
Mitigation of Non-radiological Consequences	23 (1) At the preparedness stage, the operator shall make arrangements for mitigating the non-radiological consequences of a nuclear or radiological emergency and of an emergency response and for responding to concerns of the public in a nuclear or radiological emergency. (2) As part of these arrangements, the operator shall consider ways of solving concerns and misperceptions that could lead to inappropriate actions of workers, their families and the general public. (3) These arrangements shall include providing the emergency workers, helpers, and evacuated non-essential personnel with: (a) information on any associated health hazards and clear instructions on the actions to be taken; (b) medical and psychological counseling; and (c) social support for personnel and dependents.
Requisition, Provision and Receipt of International Assistance	24 (1) During emergencies, when needed, the operator shall request international assistance through existing channels in the country designated as national competent authorities in relation to the International Atomic Energy Agency. (2) In the planning phase, the operator shall make the adequate arrangements to request international assistance, through using the existing national channels. (3) Arrangements shall be in place at the level of operator for receiving international assistance, in case of nuclear or radiological emergency.

Termination of Emergency	25 (1) At the preparedness stage, the operator shall establish provisions and criteria to discontinue the implemented on-site protective actions when further assessment shows that they are no longer justified. (2) The operator shall make arrangements for the transition from an emergency exposure situation to an existing exposure situation, with due account to assignment or transfer of responsibilities and actions to be performed for safe and stable conditions on the site. (3) For facilities in EPC I, II and III, a strategy and detailed planning shall be prepared in advance with on-site actions for the transition to an existing exposure situation and with recovery actions after the termination of the emergency. (4) For all facilities and activities, the operator shall recommend the termination of the emergency exposure situation and the transition to an existing exposure situation, based on comprehensive analysis of facility/activity status and the use of criteria mentioned above. (5) The operator shall submit the justification and the results of the analysis for termination of the emergency to the Authority for approval. (6) In the planning phase, the operator shall make arrangements with the off-site response organization for supporting the transition from an emergency exposure situation to an existing exposure situation, with account taken of the need for the resumption of accustomed social and economic activities. (7) The operator shall provide any necessary input for off-site decision making on cancelling restrictions and other arrangements imposed during the response phase of a nuclear or radiological emergency. (8) Following the termination of the emergency phase and the concurrent transition to an existing exposure situation, all workers undertaking relevant work on the site shall be subject to the relevant requirements for occupational exposure in planned exposure situations.
Analysis of Emergency	26 (1) The operator in the planning phase, shall make arrangements to document, protect and preserve data and information important for an analysis of the nuclear or radiological emergency and of the emergency response. (2) Arrangements shall be made to enable comprehensive interviews on the causes of the nuclear or radiological emergency to be conducted with those involved. (3) Arrangements shall be made to acquire the expertise needed to perform the evaluation of the nuclear or radiological emergency. (4) The operator, for all facilities and activities, shall evaluate the causes and its own response to the nuclear or radiological emergency to identify actions to be taken to prevent for future the occurrence of similar emergencies and to improve emergency arrangements. (5) This review shall consider: (a) reconstruction of the scenario for the emergency; (b) root causes of the emergency; (c) the possible involvement of other sources or devices, including those in other States; (d) general implications for safety; (e) general implications for nuclear security, as appropriate; (f) necessary improvements to emergency arrangements.

	(6) Data and information important for such an assessment shall be protected and preserved, to the extent practicable, during the emergency response and for the next 30 years after the event ending. (7) Arrangements shall be made to integrate the results of the analysis into the general assessment of the emergency and of the emergency response. (8) The operator shall make arrangements at the preparedness stage for taking actions promptly on the basis of an analysis to avoid other emergencies, including provision of information to other operators, as relevant, or to other States, directly or through the International Atomic Energy Agency (IAEA).
	PART V: INFRASTRUCTURE REQUIREMENTS
Authority and Responsibility	27 (1) The operator shall in the planning phase, establish and assign the authority and responsibility for making decisions on the site. (2) The on-site emergency arrangements shall include the clear allocation of responsibilities, authorities, transfer of authorities and arrangements for coordination and communication in all phases of the response. (3) A single position on-site shall have the authority and responsibility to direct and coordinate the response actions at a moment. (4) The delegation and/or transfer of authority, together with arrangements for notifying all appropriate parties of the transfer shall be documented. (5) During an emergency, on-site personnel with authority and responsibility to perform critical response functions in an emergency response shall not be assigned any other responsibilities that would interfere with their specified functions.
Organization and Staffing	28 (1) The operator shall in the preparedness phase establish specific emergency response organization for performing its tasks during emergency situations. (2) When establishing the emergency response organization, an incident command system shall be adopted. (3) The positions responsible within the emergency response organization for the performance of the response functions shall be specified in the on-site emergency plan and relevant emergency procedures. (4) Qualified personnel shall be assigned for the positions in the on-site emergency response organization, and they shall be assessed for their initial fitness and continuing fitness for their intended duties. (5) Sufficient numbers of qualified personnel shall be available at all times, during 24 hour a day operation, and in the long term to ensure that all appropriate positions can be promptly staffed as necessary following the declaration and notification of a nuclear or radiological emergency. (6) For a facility in EPC I or II with multiple units, a sufficient number of qualified personnel shall be available to manage all the units if each of them is under emergency conditions simultaneously.
Coordination of Emergency	29 (1) The operator shall in the preparedness phase, make arrangements for the coordination of emergency response and sign protocols for operational interfaces

Preparedness and Response	with all relevant authorities at the local, regional and national levels, to include those responsible for the response to conventional emergencies and to emergencies initiated by nuclear security events. (2) For facilities in EPC I, II and III, the operator shall make written agreements with the off-site response organization for receiving external emergency services on the site. The agreements shall include at minimum: (a) circumstances in which the support will be required; (b) description of supporting organization and the type of assistance to be provided on the site; (c) roles and responsibilities of operator and the off-site response organization for protecting the external emergency workers, for recording their radiation doses and provision of medical assistance if needed; (d) emergency actions to be performed on the site; (e) resources and equipment available for providing the emergency actions on the site. (3) The operator shall ensure that arrangements are in place to harmonize its own tools, procedures, measurements and assessments, including radiation doses and radiation induced health effects, with those of other response organizations.
Plans and Procedures	30 (1) The operator shall prepare and subsequently review, revise, test and implement an on-site emergency plan for performing its assigned functions during emergency response operations. (2) The operator shall ensure that its response organization is involved in the reviewing of the on-site emergency plan and that any lessons learned from operating experience and emergencies that have occurred are taken into account and incorporated into the new version of the on-site emergency plan. (3) The operator shall ensure that the emergency plan is approved, reviewed annually and updated for its facility or activity taking into consideration lessons learned from operating experience and past emergencies. (4) The operator shall ensure that the response organization is involved in the preparation of the emergency plan. (5) After elaboration or revision, the on-site emergency plan shall be submitted to the Authority for verification and approval. (6) For all facilities and activities, the on-site emergency plan shall be coordinated with the on-site security plan and with any other plans of relevant off-site response organizations, in order to ensure that the simultaneous implementation of the plans would not reduce their effectiveness or cause conflicts. (7) The on-site emergency plan of a facility in EPC I, II or III shall include the following as appropriate: (a) A description of the on-site organization used to perform the specified functions, including the designation of persons for directing on-site activities and for ensuring liaison with off-site organizations; (b) The conditions under which an emergency shall be declared, including the criteria for emergency classification, a list of job titles and/or functions of persons empowered to declare it, and a description of suitable arrangements for alerting the response personnel and public authorities; (c) The arrangements for initial and subsequent assessment of the conditions at the facility and radiological conditions on and off the site in the EPZs;

	(d) Arrangements for minimizing the exposure of persons on the site to ionizing radiation and for ensuring medical treatment of casualties, including arrangements to take protective actions if warranted on the basis of conditions at the facility to reduce the risk of severe deterministic health effects; (e) Assessment of the status of the facility and the actions to be taken on the site to limit the extent of any radioactive release; (f) The chain of command and communication, including a description of related facilities and procedures; (g) An inventory of the emergency equipment to be kept in readiness at specified locations; (h) The actions to be taken by each position in the emergency response organization; (i) Measures to be taken for declaring the termination of an emergency. (j) A description of all activities needed to maintain emergency preparedness, including arrangements with local authority as appropriate. Outline of a minimum requirement for emergency response plan is provided in Schedule 5. (8) Based on the provisions included in the on-site emergency plan, the operator shall develop the necessary implementing procedures, analytical tools and computer programs in order to be able to perform the response functions. (9) The procedures, analytical tools and computer models to be used in performing functions to meet the requirements for emergency response, shall be tested under simulated emergency conditions validated as correct prior to use and any limitations shall be made clear to, and understood by, those responsible for decision making. (10) For activities in EPC IV, a contingency plan shall be prepared, including both emergency response actions and normal standing instructions for the operation of the mobile radioactive source.
Logistical Support and Facilities	31. (1) During emergencies, according to event progression, the operator of facilities or activities shall continuously appraise the information necessary for making decisions on the allocation of resources. (2) The operator shall provide adequate tools, instruments, supplies, equipment, communication systems, facilities and documentation, which may include procedures, checklists, telephone numbers and manuals, for performing the functions in emergency situation. (3) These items and facilities shall be selected or designed to be operational under the postulated conditions, which includes radiological, working and environmental conditions, that may be encountered in the emergency response, and to be compatible with other procedures and equipment for the response as appropriate. (4) These support items shall be located or provided in a manner that allows their effective use under postulated emergency conditions. (5) Emergency response centers shall be designated by operators of facilities and activities, with the following functions, as appropriate: (a) notifications and initiating the response; (b) coordination and direction of on-site response actions;

	(c) providing technical and operational support to those personnel performing tasks within a facility; (d) coordination of public information on the site; (e) coordination of radiological monitoring, sampling and assessment; (f) managing those evacuated from the site, including reception, registration, monitoring and decontamination; (g) safe storage of necessary resources. (6) Designing of emergency response centers shall be commensurate with the radiological risk perceived for the respective facility or activity under the operator's control. (7) The on-site emergency response center shall be interconnected with all relevant emergency response facilities of off-site response organizations for information exchange during emergency situations. (8) For facilities in EPC I and II, an on-site emergency response center separated from the facility control room, shall be provided to serve as a working place for the emergency response organization who will operate from this location in the event of an emergency. (9) An emergency control room shall be established for facilities in EPC I and II. (10) Information about important facility parameters and radiological conditions in the facility and its immediate surroundings should be available at the emergency center. The operator shall make arrangements that interfaces are available for receiving data and information from the control room or emergency control room to the on-site emergency response center. (11) The on-site emergency response center shall be equipped in such way to protect the occupants for a protracted time against hazards resulting from a severe accident. (12) For nuclear power plants, research reactors and other facilities in category I or II, the operator shall provide alternative supplies for contingency measures, which may include supply of water, compressed air, mobile electrical power, and any necessary equipment, that are necessary for mitigating severe emergency conditions. These supplies shall be located and maintained in such a way that they can withstand and will be readily accessible in postulated emergency conditions. (13) For a facility in category I or II with multiple units, adequate arrangements shall be made to manage all the units if each of them is under emergency conditions simultaneously. (14) The operator of a facility in EPC I, II or III shall ensure the availability of means of communication necessary for protective actions to be taken within the facility and in the areas controlled by the operator and also to off-site agencies with responsibility for taking protective actions within the precautionary action zone (PAZ) and the urgent protective action planning zone (UPZ) at all times. This requirement shall be taken into account in the design and the diversity of the methods of communication selected.
Trainings, Drills and Exercises	32 (1) The operator shall identify the knowledge, skills and abilities necessary to be able to perform its response functions as specified in present regulation. (2) The operator shall make arrangements for the selection of personnel and for training to ensure that the personnel have the requisite knowledge, skills, abilities, equipment, and procedures and other arrangements to perform their assigned

	response functions. The arrangements shall include ongoing refresher training on an appropriate schedule and arrangements for ensuring that personnel assigned to positions with responsibilities for emergency response undergo the specified training. (3) For facilities in EPC I, II or III all staff and all other persons on the site shall be instructed in the arrangements for receiving notifications of an emergency and of their subsequent actions. (4) For all facilities and activities, the operator shall develop training and exercise programmes for the emergency organization, in order to test the existing emergency plans, arrangements, infrastructure and personnel knowledge and skills, needed for performing the response functions. (5) The staff responsible for critical response functions shall participate in drills and training exercises at least once every year. (6) The exercise programmes shall include the participation in some exercises of, as feasible, all of the relevant regulatory bodies and off-site emergency organizations and the news media. (7) The exercises shall be systematically evaluated against pre-established response objectives that demonstrate that identification, notification, activation and other response actions can be performed effectively to achieve the goals of emergency response. (8) Lessons learned from exercises shall be assimilated and used for enhancing the existing on-site arrangements.
Quality Management Programme	33(1) The operator shall establish a quality management program as part of its integrated management system, to ensure a high degree of availability and reliability of all supplies, equipment, communication systems, plans and facilities necessary to perform the functions in a nuclear or radiological emergency. (2) This program shall include arrangements for inventories, resupply, tests and calibrations, made to ensure that these items and facilities are continuously available and functional for use in an emergency. Arrangements shall be made to maintain, review and update emergency plans, procedures and to incorporate lessons learned from research, operating experience, emergency drills and exercises. (3) The operator shall establish and maintain records in relation to both the emergency arrangements and the response to a nuclear or radiological emergency, to include dose assessments, monitoring results and inventory of radioactive waste managed, in order to allow for their review and evaluation. (4) These records shall provide for the identification of those persons requiring long term health monitoring and follow-up, as necessary, as well as for the long-term management of radioactive waste. (5) The operator shall make arrangements to review and evaluate responses in real events, drills and exercises, to record the areas in which improvements are necessary and to ensure that the necessary improvements are made.
	PART VI: MISCELLANEOUS PROVISIONS

Miscellaneous Provisions	(34) The provisions in these Regulations shall be carried out in accordance with other applicable Nuclear Regulatory Act Regulations.
Offences	(35) Any person who contravenes any provisions under these Regulations or fails to comply with any provisions in these Regulations commits an offence and shall upon conviction be liable to the penalties stipulated in the Act

SCHEDULE 1 – EMERGENCY PREPAREDNESS CATEGORIES: DESCRIPTION AND CRITERIA

Table 1: Description and Criteria for Emergency Preparedness Categories

Category	Description
EPC I	Facilities, such as nuclear power plants, for which on-site events[a, b] (including those not considered in the design) are postulated that could give rise to severe deterministic effects off the site that warrant precautionary urgent protective actions, urgent or early protective actions and other response actions to achieve the goals of emergency response in accordance with international standards, or for which such events have occurred in similar facilities
EPC II	Facilities, such as some types of research reactor and nuclear reactors used to power vessels, for which on-site events[, b] are postulated that could give rise to doses to people off the site that warrant urgent or early protective actions and other response actions to achieve the goals of emergency response in accordance with international standards, or for which such events have occurred in similar facilities. Category II (as opposed to category I) does not include facilities for which on-site events (including those not considered in the design) are postulated that could give rise to severe deterministic effects off the site, or for which such events have occurred in similar facilities.
EPC III	Facilities, such as industrial irradiation facilities or some medical facilities, for which on-site events are postulated that could warrant protective actions and other response actions to achieve the goals of emergency response in accordance with international standards on the site, or for which such events have occurred in similar facilities. Category III (as opposed to category II) does not include facilities for which events are postulated that could warrant urgent or early protective actions off the site, or for which such events have occurred in similar facilities.
EPC IV	Activities and acts that could give rise to a nuclear or radiological emergency that could warrant protective actions and other response actions to achieve the goals of emergency response in accordance with international standards in an unforeseen location. These activities and acts include:

	(a) transport of nuclear or radioactive material and other authorized activities involving mobile dangerous sources such as industrial radiography sources, nuclear powered satellites or radioisotope thermoelectric generators; and (b) theft of a dangerous source and use of a radiological dispersal device or radiological exposure device. This category also includes: (i) detection of elevated radiation levels of unknown origin or of commodities with contamination; (ii) identification of clinical symptoms due to exposure to radiation; and (iii) a transnational emergency that is not in category V arising from a nuclear or radiological emergency in another State. Category IV represents a level of hazard that applies for all States and jurisdictions.
EPC V	Areas within emergency planning zones and distances in a State for a facility in category I or II located in another State.

[a]Involving an atmospheric or aquatic release of radioactive material, or external exposure (due, for example, to a loss of shielding or a criticality event), that originates from a location on the site.

[b]Such events include nuclear security events.

[C]This includes events that are beyond the design basis accidents and, as appropriate, events that are beyond and design extension conditions.

SCHEDULE 2 – REFERENCE LEVELS, GENERIC AND OPERATIONAL CRITERIA

REFERENCE LEVELS, GENERIC AND OPERATIONAL CRITERIA

This Schedule provides generic criteria:

(a) at which protective actions and other response actions are expected to be undertaken in a nuclear or radiological emergency under any circumstances to avoid or to minimize severe deterministic effects;

(b) at which protective actions and other response actions are expected to be taken, if they can be taken safely, in a nuclear or radiological emergency to reasonably reduce the risk of stochastic effects;

(c) at which restriction of international trade is warranted in a nuclear or radiological emergency, with due consideration of non-radiological consequences;

(d) For use as a target dose for the transition to an existing exposure situation.

The table includes examples of associated protective actions and other response actions. These generic criteria, associated protective actions, and other response actions shall be considered in the development of the protection strategy including national generic criteria. Careful consideration is necessary if protective actions in the context of the protection strategy are to be taken when doses are below the generic criteria in Table II.1 and Table II.2 in order to ensure that such actions are justified and are optimized in accordance with Requirement 9.

SCHEDULE 2: TABLE 1

TABLE 1: GENERIC CRITERIA FOR ACUTE DOSES FOR WHICH PROTECTIVE ACTIONS AND OTHER RESPONSE ACTIONS ARE EXPECTED TO BE TAKEN UNDER ANY CIRCUMSTANCES TO AVOID OR MINIMISE SEVERE DETERMINISTIC EFFECTS

External acute exposure (<10 hours)		If the dose is projected:
$AD_{Red\ marrow}$[a]	1 Gy	- Take precautionary urgent protective actions immediately (even under difficult conditions) to keep doses below the generic criteria
AD_{Fetus}	0.1[b] Gy	- Provide public information and warnings
AD_{Tissue}[c]	25 Gy at 0.5 cm	- Carry out urgent decontamination
AD_{Skin}[d]	10 Gy to 100 cm^2	
Internal exposure from acute intake (Δ = 30 d[e])		
$AD(\Delta)_{Red\ marrow}$	0.2 Gy for radionuclides with atomic number ≥ 90[f]	If the dose has been received:
	2 Gy for radionuclides with atomic number Z ≤ 89[f]	- Perform immediate medical examination, consultation and indicated medical treatment
$AD(\Delta)_{Thyroid}$	2 Gy	- Carry out contamination control
$AD(\Delta)_{Lung}$[h]	30 Gy	- Carry out immediate decorporation[g] (if applicable)
$AD(\Delta)_{Colon}$	20 Gy	- Conduct registration for long term health monitoring
$AD(\Delta')_{Fetus}$[i]	0.1 Gy	- Provide comprehensive psychological counselling

[a] *$AD_{redmarrow}$ represents the average RBE weighted absorbed dose to internal tissues or organs (e.g. red marrow, lung, small intestine, gonads, thyroid) and to the lens of the eye from exposure in a uniform field of strongly penetrating radiation.*

[b] *At 0.1 Gy there would be only a very small probability of severe deterministic effects to the fetus and only during certain periods post-conception (e.g. between 8 and 15 weeks of gestation age), and only if the dose is received at high dose rates. During other periods post-conception and for lower dose rates, the fetus is less sensitive. There is a high probability of severe deterministic effects at 1 Gy. Therefore, 1 Gy is used as the generic criterion for doses to the fetus received within a short period of time: (i) in the hazard assessment, to identify facilities and activities, on-site areas, off-site areas and locations for which a nuclear or radiological emergency could warrant precautionary urgent protective actions to avoid or to minimize severe deterministic effects; (ii) for identifying exposure situations that are 'dangerous to health'; and (iii) for making arrangements for applying decisions on urgent protective actions and other response actions to be taken off the site to avoid or to minimize the occurrence of severe deterministic effects (e.g. establishing a precautionary action zone).*

[c] *Dose delivered to 100 cm2 at a depth of 0.5 cm under the body surface in tissue due to close contact with a radioactive source (e.g. source carried in the hand or pocket).*

[d] *The dose is to the 100 cm2 dermis (skin structures at a depth of 40 mg/cm2 (or 0.4 mm) below the surface).*

[e] *AD(Δ) is the RBE weighted absorbed dose delivered over a period of time Δ by the intake (I05) that will result in a severe deterministic effect in 5% of exposed individuals.*

[f] *Different generic criteria are used to take account of the significant difference in RBE weighted absorbed dose from exposure at the intake threshold values specific for these two groups of radionuclides.*

[g]*Decorporation is the action of the biological processes, facilitated by chemical or biological agents, by means of which incorporated radionuclides are removed from the human body. The generic criterion for decorporation is based on the projected dose without decorporation.*

[h]*For the purposes of these generic criteria 'lung' means the alveolar-interstitial region of the respiratory tract.*

[i]*For this particular case, 'Δ' means the period of in utero development of the embryo and fetus.*

SCHEDULE 2: TABLE 2

TABLE 2 - GENERIC CRITERIA FOR PROTECTIVE ACTIONS AND OTHER RESPONSE ACTIONS IN AN EMERGENCY TO REDUCE THE RISK OF STOCHASTIC EFFECTS

Generic criteria		**Examples of protective actions and other response actions**
Projected dose that exceeds the following generic criteria: Take urgent protective actions and other response actions		
Hthyroid	50 mSv[b] in the first 7 days	Iodine thyroid blocking[c]
E[d] *H*fetus[f]	100 mSv in the first 7 days 100 mSv in the first 7 days	Sheltering[e]; evacuation; prevention of inadvertent ingestion; restriction on food, milk and drinking water[g] and restriction on food chain and water supply; restriction on commodities other than food; contamination
Projected dose that exceeds the following generic criteria: Take early protective actions and other response actions		
E[d] *H*fetus[f]	100 mSv in the first year 100 mSv for the full period of in utero development	Temporary relocation; prevention of inadvertent ingestion; restriction on food, milk and drinking water[g] and restriction on food chain and water supply; restriction on commodities other than food; contamination control; decontamination;
Dose that has been received and that exceeds the following generic criteria: Take longer term medical actions to detect and to effectively treat radiation induced health effects		
E[d]	100 mSv in a month	Health screening based on equivalent doses to specific radiosensitive organs (as a basis for longer term medical follow-up)[h], registration, counselling
*H*fetus[f]	100 mSv for the full period of in utero development	Counselling to allow informed decisions to be made in individual circumstances

[a] *These examples are neither exhaustive nor grouped in a mutually exclusive way.*

[b] *This generic criterion applies only for administration of iodine thyroid blocking. For the thyroid, iodine thyroid blocking is an urgent protective action that is prescribed:*

(a) if exposure due to radioactive iodine is involved,

(b) before or shortly after a release of radioactive iodine, and

(c) within only a short period before or after the intake of radioactive iodine.

[c] *The equivalent dose to the thyroid (Hthyroid) only due to exposure to radioiodine.*

[d] *Effective dose.*

[e] *H_{fetus} is the equivalent dose to the fetus set to the sum of the dose from external exposure and the maximum committed equivalent dose to any organ from intake to the embryo or fetus for different chemical compounds and different times relative to conception.*

[f] *As a less disruptive protective action, sheltering may be implemented at lower doses as long as justified and optimized with due consideration of the reference level*

[g] *Restrictions on food, milk and drinking water using these generic criteria are to be applied before sampling and analysis of food, milk and drinking water are carried out. Such restrictions apply as long as replacements of food, milk and drinking water or other alternatives are available to ensure they would not result in severe malnutrition, dehydration or other severe health consequences.*

[h] *When results of the screening indicate that the criteria in Table II.1 are exceeded, then appropriate medical attention on the basis of Schedule 2 (see Table II.1) is necessary.*

GENERIC CRITERIA FOR FOOD, MILK AND DRINKING WATER AND OTHER COMMODITIES TO REDUCE THE RISK OF STOCHASTIC EFFECTS

II.4. Table II.3 provides generic criteria for taking protective actions and other response actions to reduce the risk of stochastic effects from the ingestion of food, milk and drinking water and from the use of other commodities in a nuclear or radiological emergency.

II.5. A value of 1/10 of the generic criteria given in Table II.2 for early protective actions and other response actions is established as generic criteria for restrictions on food, milk and drinking water and other commodities to ensure that the dose via all exposure pathways, including ingestion, will not exceed the generic criteria given in Table II.2 for early protective actions and other response actions.

II.6. If restrictions on food, milk or drinking water would result in severe malnutrition or dehydration because replacements are not available, food, milk or drinking water with concentration levels of radionuclides that are projected to result in doses above the generic criteria given in Table II.3 may be consumed until replacements are available; otherwise, the people affected may be relocated, provided that this would not result in doses above the generic criteria given in Table II.1.

SCHEDULE 2: TABLE 3

TABLE 3- GENERIC CRITERIA FOR FOOD, MILK AND DRINKING WATER AND OTHER COMMODITIES TO REDUCE THE RISK OF STOCHASTIC EFFECTS

Generic criteria		Examples of protective actions and other response actions
Projected dose from ingestion of food, milk and drinking water and from the use of other commodities that exceeds the following generic criteria: Take protective actions and other response actions		
E[a]	10 mSv per annum	Restrict consumption, distribution and sale of non-essential[b] food, milk and drinking water[c] and restrict the use and distribution of other commodities. Replace essential food, milk and drinking water as soon as possible or relocate the people affected if replacements are not available.
Hfetus[d]	10 mSv for the full period of in utero development	

[a] *Effective dose.*

[b] *Restricting essential food, milk or drinking water could result in dehydration, severe malnutrition or other severe health consequences; therefore, essential food, milk and drinking water is to be restricted only if alternatives are available.*

[c] *Hfetus is the equivalent dose to the fetus set to the sum the dose from external exposure and the maximum committed equivalent dose to any organ from intake to the embryo or fetus for different chemical compounds and different times relative to conception.*

[d] *These criteria for taking actions on food, milk and drinking water are applied once the sampling and analysis of food, milk and drinking water is carried out. This would also provide a basis for discontinuing restrictions imposed on food, milk and drinking water as a precaution on the basis of the generic criteria in Table II.2.*

GENERIC CRITERIA FOR VEHICLES, EQUIPMENT AND OTHER ITEMS TO REDUCE THE RISK OF STOCHASTIC EFFECTS

II.7. Table II.4 provides generic criteria for taking protective actions and other response actions to reduce the risk of stochastic effects arising from the use of vehicles, equipment and other items from an area affected by a nuclear or radiological emergency.

II.8. A value of 1/10 of the generic criteria given in Table II.2 for early protective actions and other response actions is established as a generic criterion for vehicles, equipment and other items from an affected area, to ensure that the dose via all exposure pathways, including the use of such vehicles, equipment and other items, would not exceed the generic criteria given in Table II.2 for early actions for a member of the public.

II.9. Restricting the use of vehicles, equipment and other items from an affected area could interfere with taking urgent protective actions and other response actions or with providing services essential to public health or wellbeing (e.g. the transfer of patients requiring continuous specialized medical treatment, who would reach a final destination only once a ship or an aircraft has left the affected area). Such vehicles, equipment and other items whose use would give rise to a projected dose above the generic criteria given in Table II.4 may be used until replacements are available, provided that:

(a) their use will not result in doses that exceed the generic criteria given in Table 2.1 for members of the public or the restriction set for exposures of helpers in an emergency;

(b) actions are taken to manage and control the dose to the user as an emergency worker, a helper in an emergency or a member of the public, as appropriate.

SCHEDULE 2: TABLE 4

TABLE 4 - GENERIC CRITERIA FOR VEHICLES, EQUIPMENT AND OTHER ITEMS TO REDUCE THE RISK OF STOCHASTIC EFFECTS

<table>
<tr><th colspan="2">Generic criteria</th><th>Examples of protective actions and other response actions</th></tr>
<tr><td colspan="3">Projected dose from the use of vehicles, equipment or other items from an affected area that exceed the following generic criteria: Take protective actions and other response actions.</td></tr>
<tr><td>E[a]</td><td>10 mSv per annum</td><td rowspan="2">Restrict non-essential[b] use.

Use essential vehicles, equipment and other items from an affected area until replacements are available provided that: (a) their use will not result in doses exceeding the generic criteria given in Table II.2 for a member of the public or the guidance values given in Schedule 4 for restricting the exposure of emergency workers, and (b) actions are taken to control the dose to the user as an emergency worker, helper in an emergency or a member of the public, as appropriate.

Estimate the exposure of those emergency workers, helpers in an emergency and members of the public who may have used a vehicle, equipment and other item from an affected area to determine whether this could have resulted in a dose warranting medical attention in accordance with Table II.2.</td></tr>
<tr><td>Hfetus[c]</td><td>10 mSv for the full period of in utero development</td></tr>
</table>

[a] *Effective dose.*

[b] *Restricting use of essential vehicles, equipment and other items from an affected area could interfere with taking urgent protective actions and other response actions or with providing services essential to public health or wellbeing (e.g. the transfer of patients requiring continuous medical treatment).*

[c] *Hfetus is the equivalent dose to the fetus set to the sum of the dose from external exposure and the maximum committed equivalent dose to any organ from intake to the embryo or fetus for different chemical compounds and different times relative to conception.*

GENERIC CRITERIA FOR ENABLING TRANSITION TO AN EXISTING EXPOSURE SITUATION

II.15. Generic criteria shall be established in terms of the projected dose for the implementation of protective actions and other actions aimed at enabling the termination of a nuclear or radiological emergency through transition to an existing exposure situation with due consideration of, and verification of the fulfilment of, the conditions set in para. II.16. These criteria are established to 1/5of the generic criteria for the early protective actions and other response actions given in Table II.2[42] and are:

(a) an effective dose of 20 mSv per annum;

(b) an equivalent dose to a fetus of 20 mSv for the full period of utero development.

II.16. The decision to terminate the nuclear or radiological emergency and the concurrent transition to an existing exposure situation is to be taken after:

(a) justified actions have been taken to reach the generic criteria[43] for enabling transition to an existing exposure situation and it has been confirmed that further actions to reach these criteria would do more harm than good;

(b) confirmation that the source of exposure is fully characterized for all members of the public living as normal in the area;

(c) the exposure situation is understood and remains stable;

(d) any restrictions on normal living conditions are limited and provisions are in place to confirm compliance with such restrictions;

(e) confirmation that interested parties, including the public, have been consulted and are being kept informed about the basis for the adjustment and the transition, with the associated health hazards put into perspective.

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[42]Criteria established to 1/5 of the generic criteria for the early protective actions and other response actions given in Table II.2 are considered to be generically justified. This is of the order of the dose for which the government is required to establish an action plan to reduce activity concentrations of sources of exposure (e.g. Rn-222) for the existing exposure situation. Being at the lower bound of the reference level for an emergency exposure situation, this level is also consistent with the reference levels established in for both emergency exposure situations and existing exposure situations.

[43]Actions taken to reach the generic criteria in para. II.15 need to be justified and optimized. However, it may not be feasible to reach these criteria for enabling the transition to an existing exposure situation. If not feasible or justified to reach these generic criteria, the transition may still be enabled as long as the generic criteria for early protective actions and other response actions given in Table II.2 are not exceeded.

SCHEDULE 3 – GUIDANCE VALUES FOR RESTRICTING EXPOSURE OF EMERGENCY WORKERS

III.1. This Schedule provides guidance values as a basis for operational guidance for restricting the exposure of emergency workers.

III.2. Table III.1 provides guidance values for restricting exposure of emergency workers in an emergency response in terms of personal dose equivalent Hp(10) from external exposure to strongly penetrating radiation The values for Hp(10) in Table III.1 assume that every effort has been made for protection against external exposure to weakly penetrating radiation and against exposure due to intakes or skin contamination.

III.3. The total effective dose and the relative biological effectiveness (RBE) weighted absorbed dose to an organ or tissue via all exposure pathways (i.e. both dose from external exposure and committed dose from intakes) need to be estimated as early as possible. Table II.1 provides guidance for the effective dose and the RBE weighted absorbed dose to an organ or tissue for consideration in restricting further exposure in response to a nuclear or radiological emergency once these doses have been estimated.

I.4. Possible severe deterministic effects to a fetus can occur at an equivalent dose to the fetus of greater than 100 mSv. Consequently, female workers who are aware that they are pregnant or who might be pregnant need to be (1) informed of this risk and (2) excluded from taking actions in response to a nuclear or radiological emergency that might result in an equivalent dose to the fetus exceeding 50 mSv for the full period of in utero development of the embryo and fetus.

TABLE 1- GUIDANCE VALUES FOR RESTRICTING EXPOSURE OF EMERGENCY WORKERS

Tasks	**Guidance value**[a]		
	*H*p(10)b	*EcADTd*	
Lifesaving actions	< 500 Sv	< 500 mSv	½AD_T[e]
	This value may be exceeded - with due consideration of the generic criteria in Table II.1 of Schedule II - under circumstances in which the expected benefits to others clearly outweigh the emergency worker's own health risks, and the emergency worker volunteers to take the action and understands and accepts these health risks		
Actions to prevent severe deterministic effects and actions to prevent the development of catastrophic conditions that could significantly affect people and the environment	< 500 Sv	<500 mSv	½*AD* $_T$
Actions to avert a large collective dose	< 500 Sv	<500 mSv	½*AD* $_T$

[a]*These values are set to be two to ten times lower than the generic criteria in Table II.1 of Schedule 3 and they apply for:*

(a) the dose from external exposure to strongly penetrating radiation for Hp(10). Doses from external exposure to weakly penetrating radiation and from intake or skin contamination need to be prevented by all possible means. If this is not feasible, the effective dose and the RBE weighted absorbed dose to a tissue or organ have to be limited to minimize the health risk to the individual in line with the risk associated with the guidance values given here; and

(b) the total dose E (effective dose) and the RBE weighted absorbed dose to an organ or tissue ADT via all exposure pathways (i.e. both dose from external exposure and committed dose from intakes) which are to be estimated as early as possible in order to enable any further exposure to be restricted as appropriate.

[b]*Hp(10) is the personal dose equivalent Hp(d) where d = 10 mm.*

[c]*Effective dose.*

[d]*RBE weighted absorbed dose to a tissue or organ.*

[e]*Values of RBE weighted absorbed dose to a tissue or organ given in Table II.1 of Schedule 3*

SCHEDULE 4 – SAFE DISTANCES SIZES INRADIOLOGICAL EMERGENCIES (EPC IV)

Situation	**The radius of the inner cordoned area, around the radioactive contaminated area[1, 2]**
Intact package with a I-WHITE, II-YELLOW or III-YELLOW label	Immediate area around the package
Damaged package with a I-WHITE, II-YELLOW or III-YELLOW label	Radius of 30 m or at: - ambient dose rate: 100 µSv/h, - 1000 Bq/cm^2 for gamma/beta contamination, - 100 Bq/cm^2 for alpha contamination
Common radioactive source, undeteriorated, such as smoke detectors	None
Other unshielded or unknown radioactive sources (deteriorated or not)	Radius of 30 m or at: - ambient dose rate: 100 µSv/h, - 1000 Bq/cm^2 for gamma/beta contamination, - 100 Bq/cm^2 for alpha contamination
Spill	The area where the material spread because of the overturning
Major spill	The area where the material spread because of the overturning.
Fire, suspected radiological bomb, explosion or fumes, spent fuel, Plutonium spill	Radius of 300 m (or more, in order to ensure protection against an explosion effects) or at: - ambient dose rate: 100 µSv/h, - 1000 Bq/cm^2 for gamma/beta contamination,
Explosion / fire involving nuclear weapons	Radius of 1000 m or at: - ambient dose rate: 100 µSv/h, - 1000 Bq/cm^2 for gamma/beta contamination, - 100 Bq/cm^2 for alpha contamination

[1]The distances around the radioactive contaminated area, in case of radiological emergencies that take place in the open areas; if the emergency occurs inside a building, the distances shall be smaller in order to be able to control the access in the area and, more over, the buildings may be a filter or a shieldi ng for what is released;

[2]The operational intervention levels (the ambient gamma dose rates and radioactive concentrations in depositions) are calculated for the generic criteria corresponding to the evacuation (50 mSv/week); when calculating the depositions, the re-suspension phenomenon and the accidental ingestion of radioactive material are considered; the operational intervention levels for beta contamination are calculated for high or unknown radio-toxicity radionuclides; for beta emitters radionuclides with low radio-toxicity (H-3, C-14, S-35, Cr-51, Fe-55, Ni-63, Tc-99m or I-125), the operational intervention levels for beta contamination may be 10 – 100 higher; the ambient gamma dose rate shall be measured at 1 m distance from the soil.

SCHEDULE 5 – OUTLINE OF EMERGENCY PLANS

5.1 FACILITY (ON-SITE) EMERGENCY PLAN OUTLINE FOR EPC I, II and III

TITLE (COVER) PAGE

- *title of the plan,*
- *approval date,*
- *version number,*
- *signatures, facility and local off-site response / organizations*

CONTENTS

1. INTRODUCTION

1.1 Purpose

- *Describe the purpose of the plan.*

1.2 Participating organizations

- *List all organizations participating in the plan.*

1.3 Scope

- *Describe the scope of the plan.*

1.4 Legal basis

- *List the national laws, codes or statutes that define responsibility for planning, decisions and actions governing the response to radiation and conventional emergencies and criminal activities.*

1.5 Related plans and documents

- *Describe the relationships to the local jurisdictions' emergency plan, the NREP and other plans that are to be used simultaneously with this plan.*
- *Provide a complete list of all the supporting documents in an appendix.*

2. PLANNING BASIS

2.1 Types of hazards and protection strategy

- *Give a brief description of the characteristics of facility emergencies that were considered in development of the plan. This should include the results of a comprehensive safety analysis and low probability events as well as nuclear security.*
- *Provide a brief description of the on-site protection strategy based on the same reference level and generic criteria as the off-site protection strategy with a set of protective actions for protecting the public and personnel inside the facility and for protection of the emergency workers performing response actions on the site. List the generic criteria and associated operational intervention levels included.*

2.2 Terms

- *List the standard definitions of terms that should be used consistently in other plans and procedures in order to promote co-ordination. Where possible, the terms used by the organizations involved in the response to conventional emergencies should be adopted.*

2.3 Response roles and responsibilities

- *Describe the roles and responsibilities of the on-site departments, off-site organizations and corporate management in this plan.*

- *Discuss responsibility for authorizing/activating the response (e.g. shift supervisor) and directing the total on-site response in relation to time.*

- *Show how responsibilities would differ as the on-site staff is augmented or in other circumstances (e.g. simultaneous execution of the security plan).*

- *Describe how responsibilities are delegated or transferred.*

- 2.4 Response organization

- *Provide a block diagram of the on-site response organization components (sections, groups, teams or positions) with a brief description of responsibilities of each "block" and the emergency facility or location where these organizational elements will probably perform.*

- *Show how the organization integrates into the off-site organization structure, and describe participation in the off-site response command group and other appropriate organizational components, such as the public information or radiological assessment groups.*

- *Provide a detailed discussion of authorities, responsibilities, and duties of the organizational components should be provided in the implementing procedures for the component.*

2.5 Response facilities

- *Describe the response facilities that may be functional during a response.*

2.6 Response communications

- *Describe systems used for communication with off-site officials, emergency services, in-plant personnel and teams, and environmental monitoring teams.*

- *Describe how continued compatibility of communications will be maintained.*

2.7 Logistics/resource commitments (see Elements B5.1, B4.6)

- *Describe the arrangements, including the organizational component responsible during a response for providing logistics support, for prompt procurement of needed supplies and services, possibly bypassing normal procurement arrangements.*

- *Describe the resources of that will be made available to meet their obligations under the plan or that could be provided as assistance to local governments or other States.*

- *Describe the conditions under which resources will be provided*

2.8 Concept of operations

- *Give a brief description of the ideal response of the organization in the context of the total response.*

3. EMERGENCY RESPONSE PROCESS

- *Describe the arrangements for the organizations to perform their functions assigned under the NREP or for local jurisdictions to carry out the functions in the following subsection and, where appropriate, to co-ordinate them under the NREP.*

- *Identify the response organization component responsible for performing the functions.*

- *Refer to the appropriate implementing procedures that will be used during an emergency to carry out each function.*

3.1 Notification, activation and request for assistance

- *Describe the arrangements, including those for the emergency organization responsible, for declaration of an emergency, off-site notification, activation of the response organization, and transition to the on-site response organizations.*

- *The classification system and the emergency action levels (EALs) used to decide on the level of emergency to declare should be consistent with the NREP and described in an appendix.*

3.2 Emergency management

- *Describe the command-and-control system used to manage the onsite response and the relationship to the local jurisdiction command and control system and, if appropriate, how it will function in the event of simultaneous response under other on-site plans (e.g. security plan).*

- *This should include a single on-site emergency manager and integration, as soon as practical, into the off-site ICS command group.*

- *Refer to the appropriate implementing procedures that will be used during an emergency to carry out these functions.*

- *This should include an overall procedure for on-site response for the on-site emergency manager guiding the response to each type of emergency (e.g. general emergency).*

3.3 Performing mitigation

- *Describe the arrangements for technical support for the operations staff, on-site damage control, firefighting, and medical aid and describe arrangements to obtain off-site emergency services assistance.*

3.4 Taking urgent protective action

- *Describe the arrangements to promptly recommend off-site protective actions to off-site officials, including criteria based on facility conditions and environmental measurements.*

- *Describe the arrangements for protection of on-site personnel.*

- *Provide maps of the on-site area, showing assembly points, sheltered areas, and evacuation routes in an appendix.*

3.5 Providing information, warnings and instructions to the public

- *Describe the provisions for the on-site organization to support the local jurisdiction arrangements to perform this function.*

3.6 Protecting emergency workers

- *Describe the arrangements to protect on-site responders against all anticipated hazards.*

3.7 Providing medical assistance and mitigating the non-radiological consequences

- *Describe the on-site arrangements for treatment/first aid, dose reconstruction, decontamination and transport of injured people and for initial off-site treatment.*

3.8 Assessing the initial phase

- *Describe the on-site system to assess plant conditions and environmental releases used to assess the course of the emergency and determine the event classification and potential off- site consequences.*

- *Describe the arrangements for conducting environmental monitoring on and near the site in co-ordination with off-site response, and include the default OILs to be used.*

- *Describe the teams available and other organization elements involved and provisions for participation in the radiological monitoring and assessment center (RMAC).*

3.9. Keeping the public informed (media relations)

- *Describe the arrangements to co-ordinate providing information to the media with the off-site jurisdictions through a single spokesperson or during joint briefings with off-site officials at the Public Information Centre.*

3.10 Taking agricultural, ingestion and long-term countermeasures.

- *Describe the arrangements to provide the agreed-on support (if any) to off-site jurisdictions in this functional area.*

3.11 Terminating a nuclear or radiological emergency

- *Describe how the termination of the emergency will be coordinated with off-site officials. 3.12 Managing radioactive waste in a nuclear or radiological emergency*

- *Describe how radioactive waste will be managed and coordinated with off-site officials.*

3.13 Mitigating non-radiological consequences of a nuclear or radiological emergency and of an emergency

- *Describe how non-radiological consequences will be managed and coordinated with off-site officials*

3.14 Requesting, providing and receiving international assistance for emergency preparedness and Response

- *Describe the arrangements to ensure that relevant international assistance for emergency preparedness and response is obtained.*

3.15 Analyzing the nuclear or radiological emergency and the emergency response

- *Describe the arrangements to ensure that the emergency response is analyzed.*

3.16 Financing operations

- *Describe the system for financing of operations and reimbursement of organizations that provide support during a response and existing agreements.*

3.17 Maintaining records and management of data

- *Describe the arrangements to ensure that relevant information is recorded and retained for use in evaluations conducted after the emergency, and for long term health monitoring and follow-up of emergency workers and members of the public who may be affected.*

4. EMERGENCY PREPAREDNESS PROCESS

- *Describe the arrangements, and the responsible person, to perform the functions listed in the subsections below which are needed to develop and maintain the capability to respond to an emergency as described in the plan. Refer to the appropriate implementing procedures that will be used routinely to ensure these preparedness functions are adequately performed.*

4.1 Authorities and responsibilities 4.2 Organization
4.3 Co-ordination
4.4 Plans and procedures

4.5 Logistical support and facilities
4.6 Training
4.7 Exercises
4.8 Quality assurance and programme maintenance

REFERENCES

LIST OF ABBREVIATIONS

DISTRIBUTION LIST

- *List (and distribute to) all individuals/organizations that are parties to this plan or that will be developing response arrangements that should be consistent with this plan.*

APPENDICES

- Appendix 1 - Organization authorities, responsibilities and capabilities
  - *Describe (or refer to a publication describing) organization authorities, responsibilities, capabilities and resources in emergency situations.*
- Appendix 2 - Agreements
  - *List (or refer to a publication listing) summarized agreements to receive assistance* from offsite emergency services and off-site medical institutions.

- Appendix 3 - Emergency planning maps and diagrams

o Provide (or refer to publications providing) maps/diagrams of the on-site area or facility showing assembly points, sheltered areas, evacuation routes, monitoring/sampling locations, emergency facilities, and areas that are potentially hazardous under emergency conditions.

- Appendix 4 - Emergency classification system

o *Provide (or refer to publications providing) a description of the emergency classification system and associated EALs.*

- Appendix 5 – Protective Action

o *Provide (or refer to a publication providing) a summary of the protective actions to be implemented on-site and recommended to off-site authorities for each class of emergency.*

- Appendix 6 - Facilities and specialized radiological resources

o *List (or refer to publications listing) major facilities and radiological resources that are needed to implement the plan and that may be provided to support local*

governments, and the organizations responsible for providing them.
o This should include, as appropriate, the response teams.
o List the organizations (e.g. research reactors, universities) that could be sources of additional specialized personnel and equipment.

- Appendix 7 - Supporting documentation

o List all the supporting documentation relevant for maintenance and implementation of the plan.

5.2 MOBILE (OFF-SITE) SOURCE OPERATOR'S CONTINGENCY PLAN/PROCEDURE OUTLINE

This outline is for the plan for the operator of a practice involving a dangerous mobile source (e.g. industrial radiography or brachytherapy).

- *Unlike other plans, the contingency plan for operators of mobile sources should contain the detailed procedures needed for implementation.*
- *Include information that should be updated regularly (e.g. phone numbers) as attachments.*
- *The procedures should be tested with typical users to ensure that they work under emergency conditions.*

1**. EMERGENCY RESPONSE**

- *On the title (cover) page write title of the plan, version No., and validation date.*
- *Other information such as: author(s) and preparation date, reviewer and review date, responsible manager and approval date, and signatures.*

1.1. ENTRY CONDITIONS

- *Prominently display the emergencies covered by the plan, e.g. operator injury, suspected overexposure, lost or stolen sources, stuck, damaged, or unshielded source, fire, suspected contamination, and unanticipated.*

1.2 RESPONSIBILITY

- *Prominently display who is responsible for implementation and maintenance of this plan, including the operator.*

1.3 CAUTIONS

- *Prominently display the safety steps performed before use of the plan, potential hazards and protective equipment/measures to be used.*

1.4 IMMEDIATE RESPONSE ACTIONS

- *Refer to the page number of the section in the plan that lists the immediate actions for the emergency.*
- *Have separate procedures for each emergency that list the immediate steps (actions) to be taken by the operator.*
- *Refer to appendices for lists of phone numbers and other supporting details.*
- *The steps should refer to information in an appendix to be used by the radiological assessor or radiation protection officer and local off-site officials.*

2. NORMAL STANDING INSTRUCTIONS

2.1 OPERATOR DAILY CHECKS

- *List the checks that the operator should complete before starting and finishing work.*
- *List equipment, procedures etc. to be taken to the job site.*

2.2. TRAINING AND EXERCISES

- *Describe the employee training requirements and process*

2.3 PLAN AND EQUIPMENT MAINTENANCE

- *Describe arrangements to maintain the contingency plan and equipment, calibration and other equipment checks and naming the person responsible.*

DISTRIBUTION LIST

- *List all individuals and organizations that are to receive the plan, including operators, their supervisors and the radiological assessors or radiation protection officers.*

APPENDICES

- Appendix 1 - Contact numbers

o List the phone numbers of the notification point for reporting emergencies, radiological assessors or radiation protection officers and sources of governmental radiation protection expertise and services.

- Appendix 2 - Information for radiological assessor or radiation protection officer

o Provide information for the emergency assessment and mitigation actions to be performed by the radiological assessor or radiation protection officer.

- Appendix 3 - Information for local off-site officials

o Describe and provide a picture of the device and a description of the associated hazard if lost or stolen.
o Provide basic instructions to be given to local officials in the event of an emergency.