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Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency

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CONTENTS

1. INTRODUCTION

BACKGROUND

1.1. Under Article 5(a)(ii) of the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency [1], one function of the IAEA is "to (a) collect and disseminate to States Parties and Member States information concerning:… (ii) methodologies, techniques and available results of research relating to the response to nuclear accidents or radiological emergencies".

1.2. In March 2015, the IAEA's Board of Governors approved a Safety Requirements publication (safety standard), Preparedness and Response for a Nuclear or Radiological Emergency, which was issued in the IAEA Safety Standards Series as Part 7 of the General Safety Requirements (hereinafter referred to as GSR Part 7) [2].

1.3. GSR Part 7 [2] establishes requirements for an adequate level of preparedness and response for a nuclear or radiological emergency, irrespective of the initiator of the emergency, which could be a natural event, a human error, a mechanical or other failure, or a nuclear security event[1]. GSR Part 7 [2] is jointly sponsored by 13 international organizations.

1.4. Public communication is essential to the effectiveness of protective actions to mitigate adverse consequences of an emergency for human life, health, property and the environment. Effective communication with the public that is timely, clear and accurate is also important for maintaining trust on the part of the public.

1.5. Requirement 13 of GSR Part 7 [2] concerns arrangements for communication with the public throughout a nuclear or radiological emergency. Requirement 13 of GSR Part 7 [2] (para. 5.70) requires that "Arrangements shall be made to ensure that information provided to the public by response organizations, operating organizations, the regulatory body, international organizations and others in a nuclear or radiological emergency is coordinated and consistent, with due recognition of the evolutionary nature of an emergency".

[1] A 'nuclear security event' is an event that has potential or actual implications for nuclear security that must be addressed. Such events include criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities or associated activities. A nuclear security event, for example, sabotage of a nuclear facility or detonation of a radiological dispersal device, may give rise to a nuclear or radiological emergency.

1.6. Requirement 13 of GSR Part 7 [2] (para. 5.72) requires that "The government shall ensure that a system for putting radiological health hazards in perspective in a nuclear or radiological emergency is developed and implemented with the following aim:

- "To support informed decision making concerning protective actions and other response actions to be taken;
- "To help in ensuring that actions taken do more good than harm;
- "To address public concerns regarding potential health effects."

1.7. Requirement 13 of GSR Part 7 [2] (para. 5.72) requires that "In the development of such a system, due consideration shall be given to pregnant women and children as the individuals who are most vulnerable with regard to radiation exposure."

1.8. Requirement 13 of GSR Part 7 [2] (para. 5.73) requires that "Arrangements shall be made to explain any changes in the protective actions and other response actions recommended in the State and any differences from those recommended in other States (paras 6.13–6.15)."

1.9. Requirement 13 of GSR Part 7 [2] (para. 5.74) requires that arrangements "be made to identify and address, to the extent practicable, misconceptions, rumours and incorrect and misleading information that might be circulating widely in a nuclear or radiological emergency, in particular those that might result in actions being taken beyond those emergency response actions that are warranted."

1.10. Effective public communication is contingent on the level of emergency preparedness of the States and organizations involved. Emergency preparedness includes developing a public communication programme, including a strategy and plans for being adequately prepared for public communication in a nuclear or radiological emergency. . This plan should include training and exercises for continuous improvement of the programme for public communication in emergency response.

1.11. Experience has demonstrated the importance of, and the challenges involved in, communicating with the public in a nuclear or radiological emergency. Past emergencies have had local, national, regional and international consequences, and have led to high levels of awareness and concern on the part of the public. This has led to greater emphasis being placed on effective public communication in preparedness for and response to a nuclear or radiological emergency.

1.12. Requirement 10 of GSR Part 7 [2] requires that "The government shall ensure that arrangements are in place to provide the public who are affected or are potentially affected by a nuclear or radiological emergency with information that is necessary for their protection, to warn them promptly and to instruct them on actions to be taken."

1.13. Requirement 10 of GSR Part 7 [2] (para. 5.45) requires that "For facilities in [emergency preparedness] category I or II [2] and areas in [emergency preparedness] category V, arrangements shall be made to provide the permanent population, transient population groups and special population groups or those responsible for them and special facilities within the emergency planning zones and emergency planning distances (see para. 5.38 [of Requirement 9 of GSR Part 7 [2]]), before operation and throughout the lifetime of the facility, with information on the response to a nuclear or radiological emergency. This information shall include information on the potential for a nuclear or radiological emergency, on the nature of the hazards, on how people would be warned or notified, and on the actions to be taken in such an emergency."

1.14. Requirement 10 of GSR Part 7 [2] (para. 5.47) requires that "For facilities in [emergency preparedness] category III and [emergency preparedness] category IV, arrangements shall be made to provide the public with information and instructions 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. 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."

1.15. In meeting Requirement 10 and Requirement 13 of GSR Part 7 [2], States will contribute to fulfilling, in part, Requirement 16 of GSR Part 7 [2], which requires that "The government shall ensure that arrangements are in place for mitigation of non-radiological consequences of a nuclear or radiological emergency and of an emergency response."

1.16. Such non-radiological consequences of a nuclear or radiological emergency and of an emergency response could include, for example, anxiety and long term psychological effects among the public. Such non-radiological consequences could be mitigated by means of

[2] The five categories for emergency preparedness specified in Table 1 of GSR Part 7 [2] establish the basis for a graded approach to the application of the requirements established in GSR Part 7 and for developing generically justified and optimized arrangements for preparedness for and response to a nuclear or radiological emergency. For a description of the emergency preparedness categories, see Table 1 (pp.13–14) of GSR Part 7 [2].

effective public communication on radiological health hazards and clear instructions on any protective actions to be taken.

1.17. Requirement 16 of GSR Part 7 [2] (para. 5.90) requires that "Arrangements shall be made for mitigating the non-radiological consequences of an emergency and those of an emergency response and for responding to public concern in a nuclear or radiological emergency. These arrangements include arrangements for providing the people affected with (a) Information on any associated health hazards and clear instructions on any actions to be taken (see Requirement 10 and Requirement 13); (b) Medical counselling and psychological counselling, as appropriate; and (c) Adequate social support, as appropriate."

1.18. This Safety Guide provides recommendations and guidance on the arrangements to be put in place, as part of emergency preparedness, for effective public communication in the response to a nuclear or radiological emergency in order to meet this requirement.

1.19. This Safety Guide provides recommendations and guidance on public communication in relation to anxiety among the public, actions on the part of the public that have not been recommended by an authority and actions to be avoided by the public.

1.20. Requirement 43 of Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, IAEA Safety Standards Series No. GSR Part 3 [3] (para. 4.5(e)) requires that "The emergency management system shall provide for essential elements at the scene, and at the local, national and international level, as appropriate, including… (e) Reliable communication, including public information".

1.21. At the international level, the Joint Radiation Emergency Management Plan of the International Organizations[3] [4] provides for the release of consistent and coordinated public information by international intergovernmental organizations in a nuclear or radiological emergency, on the basis of the respective roles and responsibilities of, and actions taken by, the organization.

[3] The Inter-Agency Committee on Radiological and Nuclear Emergencies has been established as an inter-agency coordination mechanism to ensure that arrangements for emergency preparedness and response at the international level are consistent. The Committee, which comprises relevant international intergovernmental organizations, maintains the Joint Radiation Emergency Management Plan of the International Organizations.

OBJECTIVE

1.22. The objective of this Safety Guide is to provide recommendations and guidance on meeting requirements in respect of arrangements for public communication in preparedness for and response to a nuclear or radiological emergency. The main requirements are principally Requirements 10, 13 and 16 of GSR Part 7 [2] and Requirement 43 of GSR Part 3 [3].

1.23. This Safety Guide provides recommendations and guidance to States on arrangements to be made at the preparedness stage for communication with the public and the news media. The Safety Guide also provides recommendations and guidance on the activation of these arrangements in an emergency response. It also provides recommendations and guidance on the coordination of response organizations and other authorities providing official information in preparedness for and response to a nuclear or radiological emergency.

1.24. This Safety Guide provides specific recommendations and guidance for:

(a) A public communication programme for transparent (i.e. frank and open), timely, clear and accurate (i.e. factually correct) communication with the public;

(b) Coordination, to the extent practicable, of response organizations and other authorities providing official information;

(c) Consistent and effective messaging.

1.25. This Safety Guide is for use in conjunction with GSR Part 7 [2], with due account taken of the recommendations and guidance provided in Arrangements for Preparedness for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GS-G-2.1 [5], Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GSG-2 (hereinafter referred to as GSG-2) [6] and Arrangements for the Termination of a Nuclear or Radiological Emergency, IAEA Safety Standard Series No. GSG-11 (hereinafter referred to as GSG-11) [7].

SCOPE

1.26. The terms ‘emergency’ and ‘nuclear or radiological emergency’ are defined in the IAEA Safety Glossary, 2018 Edition, [8] as follows:

> “**emergency**. A 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. This includes situations for which prompt action is warranted to mitigate the effects of a perceived hazard.

"***nuclear or radiological emergency***[4]. An emergency in which there is, or is perceived to be, a hazard due to: (a) The energy resulting from a nuclear chain reaction or from the decay of the products of a chain reaction; (b) radiation exposure[5]."

1.27. The recommendations and guidance provided in this Safety Guide are applicable for a nuclear or radiological emergency, irrespective of the initiator of the emergency, including emergencies due to a perceived hazard. The Safety Guide is applicable for all facilities and activities[6] with the potential for causing radiation exposure, environmental contamination or concern on the part of the public warranting protective actions and other response actions[7].

1.28. The recommendations and guidance provided in this Safety Guide cover the range of possible nuclear and radiological emergencies. This necessitates the use of a graded approach[8] in their application. Recommendations and guidance are provided on the use of a graded approach for arrangements for public communication in preparedness for and response to a nuclear or radiological emergency.

1.29. A nuclear or radiological emergency includes emergencies in which there is perceived to be a hazard due to: (a) the energy resulting from a nuclear chain reaction or from the decay of the products of a chain reaction; or (b) radiation exposure. This Safety Guide is also applicable for a nuclear or radiological emergency of heightened public concern or media attention deriving from misconceptions, rumours and incorrect and (inadvertently or intentionally)

[4] The term 'emergency' is used generally in this Safety Guide to mean a nuclear or radiological emergency.
[5] The term 'radiation' is used in this Safety Guide to mean ionizing radiation.
[6] 'Facilities and activities' is a general term encompassing nuclear facilities, uses of all sources of ionizing radiation, all radioactive waste management activities, transport of radioactive material and other practices or situations in which people may be subject to exposure to radiation from naturally occurring or artificial sources [8].
[7] The emergency response is the period of time from the detection of conditions warranting an emergency response until the completion of all the emergency response actions taken in anticipation of or in response to the radiological conditions expected in the first few months of the emergency. The emergency response typically ends when the situation is under control, the off-site radiological conditions have been characterized sufficiently well to identify whether and where food restrictions and temporary relocation are required, and all required food restrictions and temporary relocations have been put into effect (Ref. [7], para. 2.9; [8]).
[8] A graded approach is defined as: (1) For a system of control, such as a regulatory system or a safety system, a process or method in which the stringency of the control measures and conditions to be applied is commensurate, to the extent practicable, with the likelihood and possible consequences of, and the level of risk associated with, a loss of control. (2) An application of safety requirements that is commensurate with the characteristics of the facilities and activities or the source and with the magnitude and likelihood of the exposures.

misleading information (i.e. misinformation) and speculation that might be circulating, irrespective of any radiological hazard.

1.30. The recommendations and guidance provided here are applicable for all organizations with roles and responsibilities in preparedness for and response to a nuclear or radiological emergency. The principal users of this Safety Guide are all those with responsibilities for communication with the public and the news media in an emergency, including those who do not have day-to-day public communication tasks.

1.31. This Safety Guide provides recommendations and guidance on public communication in an emergency for the purpose of mitigating adverse consequences of a nuclear or radiological emergency for human life, health, property and the environment. It provides recommendations and guidance for ensuring that due attention is paid to public communication in preparedness for and response to an emergency and for supporting decisions made on protective actions.

1.32. This Safety Guide also provides recommendations and guidance on roles and responsibilities in relation to public communication for those who may not have a designated function in public communication.

1.33. Terms are used in this Safety Guide with meanings as defined in GSR Part 7 [2] and in the IAEA Safety Glossary, 2018 Edition [8].

1.34. The term 'public communication' in the context of this Safety Guide refers primarily to the dissemination of officially approved and issued information (i.e. official information) on or in relation to a nuclear or radiological emergency to:

(a) The population affected by or potentially affected by the emergency;

(b) The public and the news media (i.e. public information);

(c) Other interested parties.

1.35. The recommendations and guidance provided in this Safety Guide will be subject to inevitable effects of linguistic, social, economic and political factors on how information is received, understood, credited and trusted, and acted upon.

1.36. The recommendations and guidance on public communication provided in this Safety Guide are not applicable to:

(a) Communication with and consultation of interested parties in relation to the planning of new nuclear facilities or other facilities or activities, or in relation to existing facilities, such as: public information in visitor centres; communication and informational materials unrelated to nuclear safety and security, such as materials on nuclear energy or nuclear applications; and public campaigns in relation to the nuclear industry.

(b) Arrangements for communication after an emergency has been declared terminated.

1.37. The recommendations and guidance on basic concepts and approaches provided in this Safety Guide will support planning, within the context of emergency preparedness, for public communication following the termination of a nuclear or radiological emergency.

STRUCTURE

1.38. Section 2 provides recommendations and guidance on considerations in public communication in preparedness and response for a nuclear or radiological emergency, and its objectives, principles and challenges.

1.39. Section 3 provides recommendations and guidance on arrangements for preparedness for a public communication programme, including a strategy and plan for preparedness for communication in a nuclear or radiological emergency. Additional recommendations and guidance are provided on, among other things, infrastructure, resources, budgeting, tools, training and exercises. Section 3 also provides recommendations and guidance on putting radiological health hazards in perspective.

1.40. Section 4 provides recommendations and guidance on arrangements for response for a public communication programme, with emphasis on actuating a public communication response and coordinating different activities and different roles and responsibilities. Responding to misinformation and rumours is covered in Section 4.

1.41. Section 5 provides recommendations and guidance for public communication under particular circumstances, such as nuclear or radiological emergencies initiated by an accident, a natural event or a security event, and the transition phase after the termination of an emergency.

1.42. The Appendix provides a system for putting radiological health hazards in perspective, in support of Section 3. Annexes I–V provide supporting information on public communication, including examples and templates to facilitate the choice of communication

tools and the preparation of public information. Annex V provides information on the attribution of health effects to radiation exposure and the prospective inference of risks of radiation induced health effects.

2. CONSIDERATIONS IN PUBLIC COMMUNICATION

OBJECTIVES OF PUBLIC COMMUNICATION

2.1. As part of emergency preparedness and response, the primary purpose of public communication should be to help to achieve the goals of emergency response as stated in GSR Part 7 [2] (para. 3.2). In particular, public communication should help to achieve the goals of keeping the public informed and of maintaining trust on the part of the public.

2.2. Public communication should also help to achieve the goals of mitigating adverse consequences of an emergency for human life, health, property and the environment; and of preparing, to the extent practicable, for the resumption of normal social and economic activity.

2.3. To help achieve these goals of emergency response, the key objectives of public communication for a nuclear or radiological emergency should be:

(a) To protect the public;

(b) To inform the public, both at the preparedness stage and during the response, of protective actions and other response actions, and of the nature of any hazards, and to facilitate emergency response actions;

(c) To gain and to maintain trust on the part of the public in the emergency response by means of transparent, timely, clear and accurate public communication (see para. 1.24);

(d) To address public concerns with regard to potential adverse consequences for human life, health, property and the environment;

(e) To prevent undue concern, to mitigate anxiety and long term psychological effects, and to help ensure that actions taken do more good than harm;

(f) To respond to misinformation and rumours;

(g) To enable interested parties (see para. 3.131) to make informed decisions.

2.4. To be effective, the public communication programme for a nuclear or radiological emergency should ensure that public communication is transparent, timely, clear and accurate, to the extent possible (see para. 1.24). Public communication should be in plain language for a general audience. These aims may be conflicting, and professional judgement should be made about the best balance (see para. 2.65).

2.5. Public communication should be coordinated between response organizations and other authorities providing official information, and should comply with national requirements on the protection of sensitive information.

Openness in communication

2.6. Public communication in a nuclear or radiological emergency should be as 'transparent' as possible. This means that the organizations concerned should be as frank, open and straightforward as possible, and should not intentionally misinform or mislead the public. As well as frankness and openness, their public communication should demonstrate integrity and accountability.

2.7. There should be a long term process of activities in relation to public communication that contribute to gaining and maintaining trust on the part of the public. Gaining the trust on the part of the public will increase the likelihood that the public will accept and will comply with protective actions and other response actions in an emergency.

2.8. Organizations should also be frank and open if information cannot be released. Information might have to be withheld for reasons of security or for legal reasons, for example, or because it is unverified.

2.9. In order to promote openness in communication, States should encourage public communication even when information is incomplete. Trust on the part of the public should be gained and maintained by communicating on what is known, by explaining what is unknown and by stating what steps are being taken to find out more. The trustworthiness of organizations should be maintained when information is incomplete.

Timeliness of information

2.10. Delays in public communication in an emergency are a cause of anxiety and speculation among the public. Lack of communication undermines confidence on the part of the public and aids the spread of misinformation and rumours. Information should be provided in a timely manner to help in gaining confidence on the part of the public in the emergency response.

2.11. Those responsible for public communication should weigh different concerns, expectations and perspectives of interested parties, and should seek to take them into account and to communicate to the public in an effective and timely manner, especially during an emergency.

2.12. Organizations should make every effort to communicate regularly and in a timely manner, while ensuring that their communications are clear and accurate. There is often a delay in the flow of information from a facility, from an area affected or from the response organizations or other authorities in an emergency. The public and the news media may be faster in providing information at the outset in an emergency, especially online on web sites and social media platforms, with their capacity for immediate dissemination of information.

2.13. A target time for an initial communication to the public during an emergency response should be specified at the preparedness stage by the emergency response planners in coordination with the lead public information officer[9].

2.14. An initial message should ideally be communicated no later than one hour from the activation of the emergency response. This message should be facilitated by means of a preliminary statement[10] prepared at the preparedness stage (see para. 4.6 and Annex I).

Factual content

2.15. Response organizations and other authorities providing official information in an emergency should provide information to the public with the objectives of helping to ensure

[9] The term 'public information officer' is used in this Safety Guide to denote a staff member of an organization whose primary responsibility it is to provide information to and to communicate with the public and the news media.

[10] A 'preliminary statement' is an official statement by an entity to inform the public and the news media of the occurrence of an event and the key points, and to state that the entity is actively responding to the event. A preliminary statement may be delivered in writing or orally.

that protective actions are correctly followed and to gain and to maintain trust on the part of the public.

2.16. Those responsible for public communication in an emergency should ensure that information provided to the public is accurate (i.e. factually correct) and is based on verified information. Those responsible for public communication should ensure that public information does not include speculation and should not make unwarranted assurances. As stated in para. 2.8, States should encourage public communication, as appropriate, even when information is incomplete.

2.17. Information provided to the public should put protection of human life, health, property and the environment first. These objectives should not be influenced by financial, commercial or political considerations.

2.18. Information provided should be factual and accurate and should not be withheld out of concern for harm to the reputation of its source. Impartiality should be demonstrated in this way and will help in gaining and maintaining trust on the part of the public.

Clarity of language

2.19. One function of public communication in a nuclear or radiological emergency is to convey technical information in suitable language for a general audience. Such information should be provided to the extent possible in clear and comprehensible language (i.e. 'plain language'). Essential information may otherwise not be understood, committed to memory or recalled, especially during an emergency, when stress and anxiety may affect comprehension.

2.20. The language to be used in public information should be given careful consideration, to ensure, for example, that it is comprehensible to people of different generations and in different population groups, such as people with special needs.

2.21. In a nuclear or radiological emergency, priority should be given to providing information on protective actions for the public. This information on protective actions should include similar concepts and terms to those used in the information provided to targeted groups at the preparedness stage.

USE OF SCIENTIFIC AND TECHNICAL TERMS

2.22. The use of scientific and technical terms, and of scientific quantities and units and numerical data, should be kept to an essential minimum. Any such usage should be supported as necessary by definitions and explanations in clear and comprehensible language, to the extent possible, and should put the radiological health hazard in perspective.

2.23. If the use of numerical data and scientific quantities and units is necessary — to explain limits and regulations established in national legislation, for example — the organizations concerned should use the International System of Units (the SI System), as appropriate. The use of differing quantities and units, with different orders of magnitude, could cause confusion and should be avoided as far as possible.

2.24. Experts in radiation protection may use various special terms, quantities and units in describing radiation and its effects. These include 'activity', with units of becquerel (Bq) (or curie (Ci)); various dosimetric quantities, both physical quantities, with units of gray (Gy) (or rad), and practical quantities for protection purposes, with units of sievert (Sv) (or rem). Amounts of these quantities may have prefixes to the units to indicate the order of magnitude. If and when used, units and terms should be used consistently to minimize confusion and to aid comprehension, (for example, if milli- (m) is to be used, then that unit should be used consistently in all communication).

2.25. .

2.26. Radiation quantities and units are not commonly understood by or used by the public, and they do not convey to the public a sense of what is hazardous and what is not. As monitoring data and sampling data become available, measurements and their units should be put in perspective (see para. 2.29).

Use of tables, schematics, graphics, maps and graphs

2.27. Tables, schematics, graphics, maps and graphs are effective and should be used appropriately to provide information to the public in a comprehensible form. Such material should be developed with the expertise of both technical experts in the subject matter and professionals in communication.

2.28. Material should be developed, to the extent possible, at the preparedness stage, and should be tested with selected audiences for its usefulness (see also paras 3.165–3.169 and

4.78–4.80 on background information). Testing of material for usefulness should also be considered before providing information that puts radiological health hazards in perspective.

Use of comparisons

2.29. Comparisons made to put radiological health hazards and radiation exposure in perspective should be as clear and comprehensible as possible consistent with being accurate and not misleading. Comparisons made should be appropriate to the national context and the social context, and they should be relevant to the audience to ensure that such references increase understanding and do not cause confusion.

2.30. Comparisons made by using published reference material should refer to material that can be validated, and that audiences can access and understand for themselves. Those responsible for public communication in an emergency should be aware that comparisons of radiation related risks with voluntary risks and with non-radiation-related risks are contentious and should be avoided.

2.31. In the light of experience from past emergencies, those responsible for public communication in an emergency should consider making comparisons of radiation levels with natural background levels of radiation, or with radiation levels used in medical exposure or in other applications of radiation, for helping to relieve anxiety among the public [8].

COORDINATION OF PUBLIC COMMUNICATION

2.32. Requirement 2 of GSR Part 7 [2] requires that "The government shall make provisions to ensure that roles and responsibilities for preparedness and response for a nuclear or radiological emergency are clearly specified and clearly assigned".

2.33. Requirement 2 of GSR Part 7 [2] (para. 4.10) requires that "The government shall establish a national coordinating mechanism[11] to be functional at the preparedness stage, consistent with its emergency management system".

2.34. Requirement 2 of GSR Part 7 [2] (para. 4.10(i)) requires that one of the functions of this national coordinating mechanism is "To coordinate effective communication with the public in preparedness for a nuclear or radiological emergency".

[11] The mechanism for ensuring the necessary coordination may differ for different tasks. It may involve an existing body or a newly established body (e.g. a committee consisting of representatives from different organizations and bodies) that has been given the authority for coordination.

2.35. Organizations responsible for public communication in an emergency should coordinate their public communication with the aim of avoiding conflicting messages and ensuring consistency in messaging to prevent confusion. The same message should be heard from various trusted sources in a 'one message, many voices' approach, to gain and to maintain trust on the part of the public in the emergency response.

2.36. Organizations responsible for public communication should communicate information to the public that corresponds to their areas of responsibility and authority (e.g. public health, protection of the environment or law enforcement).

2.37. In exceptional circumstances, it may be appropriate for an organization to communicate information that is not within its area of responsibility (e.g. if an organization, though not the authority of jurisdiction, is nevertheless best placed to rapidly communicate information for the protection of the public).

2.38. In such cases, mechanisms should be put in place to ensure consistency of messaging between the organization communicating information and the organization having that area of responsibility and authority of jurisdiction.

2.39. Requirement 13 of GSR Part 7 [2] (para. 5.70) requires that "Arrangements shall be made to ensure that information provided to the public by response organizations, operating organizations, the regulatory body, international organizations and others in a nuclear or radiological emergency is coordinated and consistent, with due recognition of the evolutionary nature of an emergency."

2.40. In general, the primary provider of public information in a nuclear or radiological emergency should be the designated lead public information officer within an established unified command and control system (see para. 3.30). This position may be supported by other organizations in accordance with their mandates.

2.41. Procedures should be drafted, agreed upon and exercised among organizations responsible for public communication at the preparedness stage. This should include procedures for sharing information among public information officers in an emergency.

Perception of risk

2.42. It should be borne in mind that the perception of risk on the part of the public may be different from assessments of risk[12] provided by experts in radiation protection, and this has implications for public communication during a nuclear or radiological emergency. Risk perception can be influenced by various factors, including individual beliefs, values and norms, as well as wider societal and national aspects.

2.43. Experts in radiation protection define risk in terms of cause and effect relationships, and attempt to quantify the likelihood that harm may result from radiation exposure. Members of the public take account more of qualitative factors in deciding whether or not they consider an involuntary risk to be acceptable.

2.44. Those responsible for public communication should be aware of the fact that this tendency may mean that risks quantified as being of low estimated likelihood are nonetheless perceived among the public to be high risks. Detailed guidance on and examples of qualitative factors that influence perceptions of risk are provided in the IAEA EPR Series publication on Communication with the Public in a Nuclear or Radiological Emergency, Section 4, PC-IS.5, p.46 [10].

2.45. To address the tendency for risks quantified as being of low estimated likelihood to be perceived as high risks, a process that includes regular information activities and/or regular communication with and consultation of the public should be put in place at the preparedness stage. This process should be coordinated with routine activities for communication with and consultation of other interested parties.

[12] 'Risk' in this context means the estimated probability that a specified health effect will occur in a person (or among people in a group) in a given time period as a result of exposure to radiation (i.e. it is prospective). The health effect(s) in question need to be stated — e.g. risk of fatal cancer, risk of serious hereditary effects or overall radiation detriment. Risk is commonly expressed as the product of the estimated probability that exposure will occur and the estimated probability that the exposure, assuming that it occurs, will cause the specified health effect(s). The latter probability is sometimes termed the conditional risk. Risks can be estimated by using evidence from epidemiological investigations of disease rates in previously exposed populations (i.e. based on past observations). [8]

Misinformation and rumours

2.46. Requirement 13 of GSR Part 7 [2] (para. 5.74) requires that "Arrangements shall be made to identify and address, to the extent practicable, misconceptions, rumours and incorrect and misleading information that might be circulating widely in a nuclear or radiological emergency, in particular those that might result in actions being taken beyond those emergency response actions that are warranted."[13]

2.47. Requirement 16 of GSR Part 7 [2] (para. 5.92) requires that "Arrangements shall be put in place for any actions taken, beyond those emergency response actions that are warranted, by members of the public and by commercial, industrial, infrastructural or other governmental or non-governmental bodies to be, to the extent practicable, promptly identified and appropriately addressed. This shall include the designation of organization(s) with the responsibility for monitoring for, identifying and addressing such actions."

2.48. Rumours will arise from various sources during an emergency response. Social media platforms, which enable immediate dissemination of information — including misinformation, rumours and speculation — have exacerbated the challenge of responding to misinformation and rumours in an emergency. A discussion of the response to rumours during an emergency response is provided in Ref. [10].

2.49. Arrangements for responding to misinformation and rumours should be put in place with the aim of ensuring that they do not lead to actions being taken by the public on the basis of incorrect and misleading information. Such actions could go beyond those emergency response actions that are warranted and could do more harm than good.

2.50. The arrangements made for responding to misinformation and rumours should be such as to enable the identification of misinformation and rumours through media monitoring (see paras 3.115–3.116) and the correction of incorrect and misleading information by means of various public communication tools (see paras 3.140–3.181).

[13] Actions beyond those emergency response actions that are warranted include: actions that interfere with prompt taking of protective actions, such as self-evacuation both from within and from outside areas from which evacuation is ordered; actions that unnecessarily burden the health care system; actions that shun or otherwise discriminate against people or products from an area affected by a nuclear or radiological emergency; elective terminations of pregnancy that are not warranted; and cancellations of commercial flights that are not warranted.

Maintaining trust

2.51. All reasonable efforts should be made to gain and to maintain trust on the part of the public in the emergency response. These efforts should be commenced at the preparedness stage. Gaining trust on the part of the public takes time and may need continuing public communication.

2.52. Gaining and maintaining trust on the part of the public should remain an underlying objective at all times. However, it should not be expected that trust, once lost, can be regained during an emergency.

2.53. The principles of public communication (see paras 2.4–2.392.402.21) should be applied to help maintain trust on the part of the public during a nuclear or radiological emergency. Experience shows that trust on the part of the public in the emergency response, and in response organizations and other authorities providing official information, could otherwise be undermined.

2.54. Who the public decide to trust is not uniform: it should be expected that different people will place their trust in different authorities, organizations or individuals. Background information on the importance of trust in public communication is provided in Section 4, PC-IS.6 of Ref. [10] (p.49).

2.55. It should be expected that the level of trust on the part of the public will influence how willing the public will be to comply with instructions on protective actions and other response actions.

2.56. It should be expected that a loss of trust on the part of the public will increase the likelihood that people will take unwarranted actions during an emergency (see para. 2.46).

2.57. Requirement 10 of GSR Part 7 [2] (para. 5.45) requires that "For facilities in [emergency preparedness] category I or II and areas in [emergency preparedness] category V, arrangements shall be made to provide the permanent population, transient population groups and special population groups or those responsible for them and special facilities within the emergency planning zones and emergency planning distances (see para. 5.38 [of GSR Part 7 [2]]), before operation and throughout the lifetime of the facility, with information on the response to a nuclear or radiological emergency. This information shall include information on the potential

for a nuclear or radiological emergency, on the nature of the hazards, on how people would be warned or notified, and on the actions to be taken in such an emergency." (See para. 1.13.)

2.58. Public information on facilities in emergency preparedness category I or II and areas in emergency preparedness category V should be provided at the preparedness stage to help familiarize the public with the facility and with the associated emergency arrangements (see paras 1.13 and 1.14).

Timeliness and accuracy

2.59. The early hours of the response to a nuclear or radiological emergency are crucial for the public communication response. The use of social media platforms, for example, increases the demand for timely public communication.

2.60. A statement should be provided early on with the aim of dissuading providers of unofficial information from spreading misinformation and rumours and undermining trust in the emergency response.

2.61. Arrangements should be made to communicate promptly to the public even before confirmed information is available. While the public and interested parties may demand detailed information immediately, the response organizations might not have confirmed information available early in the response.

2.62. In such cases, organizations responsible for public communication should clarify which types of information are confirmed and which are unconfirmed. It should also indicate when, and the conditions under which, further information will be made available.

2.63. A pre-approved preliminary statement should be prepared for prompt distribution in an emergency, either actively (e.g. by press release, on the web site and/or on social media platforms) or reactively (i.e. in answer to specific requests from the news media, the public or other interested parties), as necessary.

2.64. A preliminary statement should be issued for public information early in an emergency, to inform the public of the emergency and, as appropriate, of the activation of an emergency response. An example template of such a preliminary statement is provided in Annex I.

2.65. Accuracy should not be sacrificed for timeliness in public communication. Incorrect and misleading information may undermine trust on the part of the public in the emergency

response and may jeopardize the objectives of public communication. This might lead to actions being taken that go beyond those emergency response actions that are warranted (see paras 2.46–2.47).

2.66. Unverified information or speculation should not be released to the public. However, it may be necessary to issue incomplete information, together with appropriate explanations and qualifications (see para. 2.8).

Recognizing social context

2.67. The public communication programme should take account of the fact that the conduct of public communication and its perception by the public may vary depending on the social context. For effective public communication with the public and interested parties, an understanding should be gained of differences in the social context. In organizing public communication, arrangements should be made to enable interested parties to participate as appropriate and activities should be prepared accordingly.

Two-way communication

2.68. A nuclear or radiological emergency will necessitate two-way communication. Arrangements should be put in place for official information to be made available to the public promptly and directly. At the same time, lines of communication with response organizations and other authorities providing official information should remain open. Such organizations should be able to use the lines of communication for responding to questions and concerns of interested parties.

2.69. Arrangements, including arrangements for resources and logistics, should be put in place for the use of various channels of communication to encourage and support two-way communication. The arrangements should help to ensure that the public has the means to communicate with response organizations and other authorities providing official information and guidance in an emergency.

2.70. Arrangements should be put in place for traditional two-way channels of communication such as dedicated telephone enquiry lines (‘hotlines’) for the news media and the public, open public meetings and other meetings with interested parties.

2.71. Those responsible for public communication in an emergency should anticipate that the changing nature of the news media and social media, and in particular the use of social media

platforms as providers of unofficial information, will generate increasing demand for two-way communication during an emergency.

2.72. Official information should be made available to the public promptly and directly. Those responsible for public communication in an emergency should anticipate that an increasing demand for two-way communication during an emergency will necessitate increased resources to enable the prompt dissemination of information and public communication at any time, depending on the nature and severity of the emergency.

2.73. Clear guidelines should be put in place on how to communicate with the public on social media platforms, as appropriate in the national context. There should be a code of conduct in place for the private use of social media platforms by members of response organizations. This is because messages posted in a private capacity could be mistaken for official information if they include comments on an emergency.

2.74. Codes of conduct should be drafted at the preparedness stage, and staff members should be informed of the rules for the use of social media platforms, and of associated pitfalls and how to avoid them.

3. ARRANGEMENTS FOR PUBLIC COMMUNICATION IN EMERGENCY PREPAREDNESS

GENERAL

3.1. Requirement 1 of GSR Part 7 [2] (para. 4.1) requires that "The government shall ensure that an emergency management system is established and maintained on the territories of and within the jurisdiction of the State for the purposes of emergency response to protect human life, health, property and the environment in the event of a nuclear or radiological emergency".

3.2. Section 3 of this Safety Guide provides recommendations and guidance on arrangements that should be put in place at the preparedness stage in order to communicate effectively with the public in the response to a nuclear or radiological emergency.

3.3. An effective emergency management system should incorporate effective public communication at all stages: the preparedness stage, the emergency response phase and the transition phase (see Section 2 of GSG-11 [7] on the phases of an emergency). Arrangements

should be put in place at the preparedness stage for public communication during the emergency response phase and during the transition phase.

PUBLIC COMMUNICATION PROGRAMME

3.4. A public communication programme is an arrangement made at the preparedness stage for organizing public communication during a nuclear or radiological emergency. It should specify (a) the principal objectives of and approach to communication in a public communication strategy; (b) a public communication plan; and (c) the necessary infrastructure and resources; all on the basis of (d) a specified budget.

3.5. Requirement 2 of GSR Part 7 [2] (para. 4.7) requires that "The government shall ensure that all roles and responsibilities for preparedness and response for a nuclear or radiological emergency are clearly allocated in advance among operating organizations, the regulatory body and response organizations." [14]

3.6. The public communication programme should be prepared in advance in accordance with this allocation of roles and responsibilities and in coordination with all responsible operating organizations, the regulatory body and response organizations within an unified command and control system (see para. 3.30). The public communication programme should be evaluated and updated at regular intervals.

3.7. Any transfer of responsibilities for public communication in the transition phase should be considered at the preparedness stage and should be included in the public communication programme.

3.8. The public communication programme, including the necessary resources, should be approved by response organizations. Appropriate human resources and financial resources should be allocated on a continuing basis for ensuring preparedness and for maintaining a high level of readiness for an emergency response.

3.9. The public communication programme should identify at the preparedness stage all practical arrangements and logistics necessary for a public communication strategy and a public communication plan. These arrangements will support public communication during the response to a nuclear or radiological emergency.

[14] This also includes the allocation of roles and responsibilities, as appropriate, among members of the government.

3.10. A public communication programme should be developed in a State irrespective of whether or not it has a nuclear power programme. An emergency involving a radioactive source could occur in any State. Experience has demonstrated that an emergency at a facility in one State could have effects among the public in other States. Possible effects include non-radiological consequences such as anxiety as well as economic and commercial consequences such as disruption to shipping and to flights of commercial airlines.

PUBLIC COMMUNICATION STRATEGY

3.11. Requirement 13 of GSR Part 7 [2] (para. 5.69) requires that "Communication with the public in a nuclear or radiological emergency shall be carried out on the basis of a strategy to be developed at the preparedness stage as part of the protection strategy". The public communication strategy should be developed and applied at the preparedness stage in order to identify key issues and target audiences, to prepare appropriate messages and to carry out communication activities.

3.12. The public communication strategy, and the public communication plan that is formulated from the strategy, should be based on a graded approach (see para. 1.281.14). The graded approach should be applied to public communication on the basis of the nature and severity and the characteristics of the emergency, the magnitude of its actual or expected consequences and its significance for the public.

3.13. The elements of a public communication strategy should include, but is not limited to:

(a) A description of all relevant scenarios for hazard assessment[15];

(b) Strategic considerations determining the main challenges for public communication for each scenario;

(c) Specific objectives for the public communication response for each scenario, with account taken of the strategic considerations, in support of achieving the goals of emergency response and the key objectives of public communication set out in paras 2.2.1 and 2.2.3;

(d) An identification of the key target audiences for each scenario;

15 Hazard assessment is the 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 [7].

(e) Key specific messages for each scenario that can be prepared at the preparedness stage in support of achieving the objectives for the scenario;

(f) Recommended approach for the most effective performance of public communication tasks (see paras 3.106–3.132) and the use of public communication tools (see paras 3.140–3.181);

(g) Anticipation of any transfer of responsibilities for public communication in the transition phase.

3.14. Guidance for developing a communication strategy is provided in an EPR Series publication on Method for Developing a Communication Strategy and Plan for a Nuclear or Radiological Emergency [11].

3.15. The context of application of the public communication strategy should be considered. Surveys should be made of the perception of risks and the information needs of the public, both at a national level and among the population potentially affected in areas around nuclear facilities or around facilities in which ionizing radiation is used.

3.16. On the basis of information obtained in these surveys, a public awareness programme should be established to provide information in plain language (see para. 2.2.19) at the preparedness stage. Information provided should cover how the response to a nuclear or radiological emergency would be conducted and how the public would be protected.

3.17. The information should be made available to the population within the emergency planning zones and emergency planning distances, to assist them in making informed decisions in compliance with protective actions or other response actions in an emergency response (see Requirement 9 of GSR Part 7 [2], para. 5.38).

3.18. The arrangements for public communication as outlined in the public communication strategy should be explained and described in the public communication plan.

3.19. Requirement 13 of GSR Part 7 [2] (para. 5.69) requires that "arrangements shall take into account the need to protect sensitive information in circumstances where a nuclear or radiological emergency is initiated by a nuclear security event". Arrangements for public communication in an emergency initiated by a nuclear security event should be established at the preparedness stage (see paras 5.115.10–5.14).

PUBLIC COMMUNICATION PLAN

3.20. Requirement 23 of GSR Part 7 [2] requires that "The government shall ensure that plans and procedures necessary for effective response to a nuclear or radiological emergency are established".

3.21. Arrangements should be made to develop a public communication plan for a nuclear or radiological emergency on the basis of the public communication strategy. A method for developing a public communication plan for a nuclear or radiological emergency is provided in Ref. [11].

3.22. The public communication plan for an emergency should apply the public communication strategy, with account taken of relevant scenarios for an emergency derived on the basis of hazard assessment scenarios.

3.23. The public communication plan for an emergency should set out a clear framework and an organizational structure for public communication. The public communication plan should allocate responsibilities, goals and tasks within the organizational structure for the public communication response.

3.24. The public communication plan should be regarded as providing operational guidelines for an appropriate public communication response to an emergency whose nature cannot be foreseen.

3.25. A public information officer should be assigned the responsibility for strategic planning for public communication. The purpose of strategic planning is to enable the public communication response to draw upon the resources stipulated in the public communication strategy and the public communication plan (see para. 4.12) as necessary under the specific The strategic planning should enable the circumstances .

3.26. The elements of a public communication plan should include, but are not limited to:

(a) A description of the organizational structure and responsibilities for the public communication response;

(b) A description of the available infrastructure and resources;

(c) A list of possible spokespersons and technical briefers (i.e. technical experts for the preparation of briefing materials) already identified;

(d) A description of the tasks for public communication and a plan for allocating these tasks to staff;

(e) An operational manual specifying actions to be taken for public communication in an emergency, and at which stage they should be taken, on the basis of the use of public communication tools [10];

(f) A description of any expected transfer of responsibilities for public communication in the transition phase.

3.27. The public communication plan should be reviewed at least once a year and should be revised as necessary at the preparedness stage in light of lessons to be learned from exercises and from actual emergency responses.

Responsibilities and organizational structure

3.28. There may be numerous organizations involved in public communication during a nuclear or radiological emergency, at the facility level, local level, national level, regional level or international level. Arrangements should be made to ensure that the responsibilities for public communication tasks (see paras 3.106–3.126) are specified and are understood for all levels of the emergency response.

3.29. The responsibilities and tasks and the coordination of the various organizations that would be involved in public communication during an emergency should be planned and specified in advance (see para. 3.53.4). The responsibilities and tasks and the coordination of the organizations that would be involved in public communication should be reflected in all organizational, local and national emergency plans.

Public communication in a unified command and control system

3.30. Requirement 6 of GSR Part 7 [2] (para. 5.7) requires that "Arrangements shall be made for the establishment and use of a clearly specified and unified command and control system for emergency response under the all-hazards approach as part of the emergency management system (see para 4.1–4.3)".

3.31. Public communication should operate as part of the emergency management system (see Section 2.1 of Ref. [10]). Within the unified command and control system, the lead public

information officer[16] should be in direct contact with and should report to the head of the response organization.

3.32. In the emergency management system, responsibilities for decision making within the unified command and control system during an emergency response are required to be assigned to designated authorities at the policy, strategic and operational levels (see Requirements 1, 2 and 6 of GSR Part 7 [2] (paras 4.1, 4.10 and 5.7).

3.33. The responsibilities in the unified command and control system should include developing a system or methods for coordination and harmonization of all emergency communication to the public or to the news media. The relevant roles and responsibilities within the unified command and control system, as specified in the emergency management system, should provide for a 'one message, many voices' approach (see para. 2.2.35).

3.34. A public information officer should be on the initial activation list at all levels of the unified command and control system when the response organization is activated. The public information officer should ensure that a channel for immediate communication and timely communication to the public is initiated.

3.35. The unified command and control system enables an emergency response to be scaled to the level warranted by the nature and severity of an emergency. The public communication response should also be scalable so that the organizational structure can be adapted to the nature and severity of the emergency and to the need for public information (see Section 2.2 of Ref. [10]).

3.36. The lead public information officer in the public communication response should be prepared to meet the need for additional staff at any time and to have available all necessary skill sets (e.g. drafting press releases, acting as spokesperson or monitoring social media), work space and resources for the dissemination of information. Availability of these resources should be approved in advance.

3.37. Those responsible for public communication in an emergency should be prepared for a high level of concern on the part of the public in a nuclear or radiological emergency. Those responsible for public communication should anticipate that the level of concern on the part of

[16] The lead public information officer is the public information officer within the unified command and control system who leads the public communication response. The term 'lead public information officer' is used here although the public communication response may not warrant the establishment of a public information officer section.

the public and the demand for public information will not necessarily be commensurate with any actual or existing hazard or threat.

3.38. Arrangements should be made for an emergency for which public communication tasks exceed the capacity of the lead public information officer. In this case, a public information officer section should be established within the unified command and control system, with the lead public information officer as section head.

3.39. The lead public information officer:

(a) Should be responsible for strategic planning for the public communication response on the basis of arrangements made at the preparedness stage;

(b) Should liaise with and consult the head of the emergency response organization and other relevant staff in the unified command and control system;

(c) Should activate additional staff for the public information officer section as necessary.

3.40. Arrangements should be put in place for the lead public information officer to have direct access to decision makers in the unified command and control system, for the purposes of information sharing, liaison and coordination.

3.41. Arrangements should be made at the preparedness stage for a clearly specified approval process for public information and official messages. Processes for the collection and dissemination of information should also be established at the preparedness stage. The approval process should be focused on providing accurate and verified information in a timely manner.

3.42. Templates (e.g. for a preliminary statement or an initial press release) should be approved, to the extent possible, at the preparedness stage to enable public communication in a timely manner.

3.43. Public communication tasks should be carried out by the lead public information officer and should be supported, as necessary, by a public information officer section. These public communication tasks are described in detail from para. 3.106 to para. 3.130.

3.44. All the various public communication tasks should be set out and should be assigned to staff in a clearly specified organizational plan (see Annex II for an example of an organizational plan for a public information officer section).

3.45. The public communication tasks may be performed by staff from one organization or from several organizations, depending on the nature of the emergency. The roles and responsibilities assigned should be clearly specified and should be rehearsed through training and exercises.

3.46. Roles and responsibilities for communication with the public at national, local and international levels, in accordance with the recommendations of paras 3.47–3.69, are described in Section 2.3 of Ref. [10].

National authorities

3.47. Usually, several national authorities are involved in a response to a nuclear or radiological emergency. Public communication during an emergency should be coordinated at the national level to avoid miscommunication and inconsistency between the various national authorities involved in the emergency response.

3.48. National authorities involved in public communication may include the competent authority under the Convention on Early Notification of a Nuclear Accident and under the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency [1], a national coordinating authority, a disaster management authority, a national health and welfare authority, the regulatory body, technical and scientific support organizations, the corporate office of the operating organization, and other government departments and ministries.

3.49. In the event that several national authorities are involved in an emergency response, their public communication should be limited to their respective areas of responsibility and expertise.

3.50. Key statements for which a 'one message, many voices' approach (see para. 2.2.35) is taken should be coordinated with all other national authorities involved in the emergency response through the unified command and control system. This coordination mechanism should be established as part of emergency plans and arrangements, and its capabilities should be tested by means of regular training and exercises (see Requirement 2 of GSR Part 7 [2] (para. 4.10(i)).

3.51. A point of contact for public communication should be established at each national authority at the preparedness stage and the contact details should be communicated to all response organizations.

3.52. As far as possible, appropriate technology and equipment for communicating between these points of contact for public communication should be prepared, tested, exercised and maintained at the preparedness stage.

3.53. The arrangements made between response organizations should be documented in the public communication plan. The arrangements should be consistent with arrangements for response to conventional emergencies such as fires or releases of hazardous chemicals, or natural disasters such as storms or earthquakes.

3.54. National authorities should make prior arrangements to provide information to the public outside areas affected by an emergency. National authorities should make specific prior arrangements to provide information to those who may be concerned for relatives in areas affected by an emergency or who may be concerned by the possibility of goods and food products being contaminated.

3.55. Public information officers should be familiar with the national emergency plan, including the roles and responsibilities of the various national authorities and officials, as well as with relevant national legislation and regulations.

3.56. To the extent possible, bilateral and multilateral agreements should be established at the preparedness stage on the coordination necessary for disseminating accurate information on an emergency to the public in neighbouring States in a timely manner.

3.57. A coordination mechanism by means such as regional networks prepared and exercised in advance should be established by the organization in the State with the main responsibility for the public communication response in an emergency.

3.58. Public information officers should be provided with opportunities to be involved as observers in the emergency exercises of neighbouring States.

Local authorities

3.59. Requirement 10 of GSR Part 7 [2] requires that "The government shall ensure that arrangements are in place to provide the public who are affected or are potentially affected by a nuclear or radiological emergency with information that is necessary for their protection, to warn them promptly and to instruct them on actions to be taken."

3.60. Local authorities and, as applicable, national authorities should put in place arrangements to provide the public with information that is necessary for their protection. The preparations

should include the provision of reliable channels of communication (e.g. warning sirens, mobile or fixed loudspeakers, local television and radio stations), the preparation and recording, as appropriate, of announcements in the languages mainly spoken by the population, and the designation of staff to make announcements.

3.61. Announcements on an emergency response should be prepared in other languages, as appropriate. For facilities in category I or II and areas in category V (see paras 1.13 and 1.14), it should be ensured that announcements are comprehensible to all those who might be affected by an emergency.

3.62. This includes the permanent population, transient population groups and special population groups or those responsible for them, and special facilities within the emergency planning zones and emergency planning distances (see paras 3.168, 3.169). It should also be considered, for example, whether to prepare suitable information for schools and hospitals.

3.63. Arrangements should be made to inform the public promptly during an emergency of protective actions and other response actions ordered, and other activities for the protection of human life, health, property and the environment. Extensive communication should be undertaken if an evacuation is ordered or if long term measures may be required for the public who are affected or are potentially affected.

3.64. Arrangements should be made for coordination of local authorities with national authorities within the unified command and control system to avoid inconsistencies between statements issued at the different levels.

3.65. Spokespersons of local authorities should be aware of information that is being disseminated about emergency response actions taken and risk assessments performed at the national level and in neighbouring areas. National spokespersons should be aware of information that is being disseminated at a local level.

3.66. Requirement 10 of GSR Part 7 [2] (para. 5.45) requires that "For facilities in category I or II and areas in category V,… [t]he effectiveness of these arrangements for public information be periodically assessed" (see paras 1.13 and 1.14). The assessment should include consultation of the public by means of conducting regular public surveys, holding discussion groups and evaluating understanding on the part of the public in exercises.

International organizations

3.67. Under the Joint Radiation Emergency Management Plan of the International Organizations [3], the IAEA, as the lead international organization for coordinating the interagency response to a nuclear or radiological emergency, should ensure that international organizations participate in the response to an emergency, as appropriate, including the public communication response.

3.68. International organizations participating in the public communication response to an emergency should ensure the following:

(a) Information on their public communication should be disseminated among the international organizations of the Joint Radiation Emergency Management Plan of the International Organizations [4].

(b) Public information should be factual and accurate and should be conducted on the basis of the roles and responsibilities of, and actions taken by, the respective international organizations. This public information should include press releases, interviews, postings on social media platforms and issuing of situation reports by organizations participating in the public communication response.

(c) Communication should be coordinated between the organizations of the Joint Radiation Emergency Management Plan of the International Organizations [3]. If the subject matter of press releases, interviews, postings on social media platforms or situation reports involves the competence and mandate of two or more organizations, the respective organizations should consult each other as relevant under the 'one message, many voices' approach (see para. 2.2.35).

3.69. If a message is to be released jointly by organizations under the Joint Radiation Emergency Management Plan of the International Organizations [4], communication should be coordinated.

3.70. The coordination should have the goals of achieving agreement on the content in a timely manner and ensuring to the extent possible that press releases and other communications contain consistent messaging and information. If this is not possible, the international organizations should limit their public information to their own area of competence.

3.71. International organizations should ensure to the extent possible that their public information is consistent with public communication by other international organizations and by the State in which the emergency arises.

3.72. In the event that an international organization receives a request for assistance in the response to a nuclear or radiological emergency, the international organization should coordinate with the other international organizations as per the arrangements in Ref [3] and obtain the requesting State's clearance if at all possible before issuing public information on the emergency to the news media and to the public.

INFRASTRUCTURE AND RESOURCES

3.73. Appropriate infrastructure for public communication should be developed, in accordance with the results of the hazard assessment and the identified potential consequences of a nuclear or radiological emergency, irrespective of the initiator of the emergency. The infrastructure for public communication should be described in the public communication plan (see para. 3.26(b)).

3.74. Appropriate infrastructure and capabilities for public communication, both on-site and off-site, including resources (both human resources and financial resources), should be allocated. Such infrastructure and capabilities should be sufficient for ensuring effective and efficient communication as required during an emergency response phase and during the transition phase (see paras 5.16–5.33).

3.75. Those responsible for public communication in an emergency should anticipate that the need for public communication during the transition phase will be different from the need for public communication in the emergency response phase.

3.76. All resources necessary for communication during the emergency response phase and in the transition phase should, as far as practicable, be specified, allocated and evaluated at the preparedness stage. This includes the potential long term availability of personnel and of infrastructure and equipment for public communication.

3.77. The infrastructure for public communication should be robust and redundant (see para. 3.89). The components of the infrastructure for public communication should be maintained and, as necessary, developed to ensure their regular upgrading and modernization. Resources

should be designated for the development and continuing maintenance of the infrastructure for public communication.

Personnel

3.78. Sufficient numbers of personnel should be available to conduct public communication in a timely manner during a nuclear or radiological emergency. These personnel should include an adequate number of public information officers to cover public information (i.e. for the public and the news media and for social media platforms), internal communication, online communication and monitoring of the media.

3.79. Trained spokespersons and technical briefers (i.e. technical experts for the preparation of briefing materials), and experts in fields such as health physics, radiation protection, medical counselling and psychological counselling, should also be available as and where necessary for public communication.

3.80. Sufficient numbers of personnel should be available to respond to misinformation and rumours in a timely manner, and to respond to requests for information from the public and the news media.

3.81. Requirement 10 of GSR Part 7 [2] (para. 6.10) requires that "Appropriate numbers of suitably qualified personnel shall be available at all times (including during 24 hour a day operations) so that appropriate positions can be promptly staffed as necessary following the declaration and notification of a nuclear or radiological emergency."

3.82. Arrangements should be made to ensure that suitably qualified personnel are available for a public communication response at all times (including during 24 hour a day operations) so that positions can be promptly staffed as necessary following the declaration and notification of an emergency.

3.83. A rotation staffing plan should be prepared for the public information officers and other communication personnel. Depending on the nature and severity and the progression of an emergency, public information officers may have to participate in a response and to provide regular public information during 24 hour a day operations for seven days a week.

3.84. Extra staffing for communication may be necessary for responding to enquiries from the public during a nuclear or radiological emergency. The number of staff necessary for covering dedicated telephone enquiry lines ('hotlines') and for activities in relation to social media

should be estimated at the preparedness stage. A plan for making such personnel available should be prepared and exercised.

3.85. All public communication, including the setting up and staffing of telephone enquiry hotlines, should be regularly trained and exercised.

Infrastructure

3.86. The infrastructure necessary for public communication in a nuclear or radiological emergency should be available at all times. The available infrastructure should include all necessary systems for receiving and disseminating information, for coordination and communication with other elements of the emergency response operation, and for communication and monitoring by means of traditional media (e.g. the press, television and radio stations), online news media and social media platforms.

Off-site information centres

3.87. Off-site information centres for public communication , whether fixed, mobile or virtual (i.e. in an online setting), should be used to provide a means for effective coordination of all activities for public information and related activities for public communication in a nuclear or radiological emergency, depending on the scale of the emergency. Off-site information centres should be integrated within existing fixed or mobile units or set up separately for operations in public communication.

3.88. Off-site information centres:

(a) Should be established at the preparedness stage and should be kept ready for use;

(b) Should be made known to the news media in advance of public communication in an emergency;

(c) Should provide for effective coordination and control of all public information and related activities for public communication within the unified command and control system;

(d) Should provide sufficient work space and facilities for the necessary public communication staff and, as appropriate, for media representatives to interact and work with the public communication staff;

(e) Should provide systems for public information officers to exchange information and data throughout the unified command and control system.

Redundancy

3.89. The concept of redundancy is the provision of alternative (identical or diverse) structures, systems and components so that any single structure, system or component can perform the required function irrespective of the state of operation or failure of any other.

3.90. The concept of redundancy should be applied to all planning for infrastructure and resources. This includes, but is not limited to, the provision of back-up equipment and systems, the training of multiple staff for the same responsibilities and tasks, and the use of different channels of communication and different service providers.

3.91. As established in Requirement 13 of GSR Part 7 [2] (para. 5.69), "Arrangements shall be made for providing… information to the public in a nuclear or radiological emergency, with account taken of the possibility that the usual means of communication might be damaged in the emergency or by its initiating event (e.g. by an earthquake or flooding) or overburdened by demand for its use."

3.92. These arrangements should include as appropriate the provision of redundant infrastructure to compensate for possible loss of power resulting from a nuclear or radiological emergency or from its initiating event.

Financial resources

3.93. In order to maintain a high level of readiness, the public communication programme for a nuclear or radiological emergency should receive dedicated and adequate funding.

3.94. The financial resources allocated for the public communication programme should be sufficient to ensure effective and efficient application of the public communication plan in routine day to day activities as well as during emergency response activities. The financial resources allocated should include, but are not limited to, funding for:

(a) Training and exercises;

(b) Communication equipment and facilities;

(c) Designation of, and as necessary contracts for, off-site information centres, additional personnel and equipment necessary for public information officers for communication in an emergency.

3.95. The financial resources allocated should enable funding for analyses to verify that objectives, goals and actions set out in the public communication plan are being met and that the public communication plan is effective.

3.96. The use of contracted services should be considered for activities that are not required to be carried out by regular staff members but that are necessary for ensuring an effective public communication response.

3.97. The use of contracted services that could be necessary for the provision of certain communication activities during a response should be assessed and exercised in advance to verify that the requested service can be provided in a timely manner, if and when needed.

3.98. Such contracted services should include, as appropriate, translation, web site hosting, acquisition of additional bandwidth, printing, rental of equipment, temporary assistance services and setting up a telephone enquiry hotline.

3.99. Assessments and exercises should take into account whether and how such contracted services would be provided in the event of an emergency that affects the electricity supply or means of communication or other infrastructure.

SPOKESPERSONS AND TECHNICAL BRIEFERS

3.100. Possible spokespersons and technical briefers for the preparation of briefing materials in support of the spokesperson should be identified at the preparedness stage. Detailed operational guidance on selecting and preparing a spokesperson is provided in Section 3 PC-AG.5 of Ref. [10].

3.101. The spokesperson, as the 'public face' of the organization's public communication response and therefore of an emergency response, should play a key part in gaining and maintaining trust on the part of the public in the emergency response and in the response organizations.

3.102. The selection of the spokesperson should be based primarily on authority and communication skills and the capacity to build a relationship based on authority and trustworthiness with the audience.

3.103. The selection of technical briefers should be based primarily on relevant technical expertise and communication skills with particular audiences.

3.104. The spokesperson should be appropriate for the severity of the emergency. For a severe emergency, the spokesperson should be the head of the response organization or the head of a higher organization. For less severe emergencies, a less senior manager or a public information officer should act as spokesperson. This also applies for recurrent briefings for news media after the initial stages of an emergency.

3.105. Technical briefers should be technical experts in relevant subject matter; for instance, experts in health physics, radiation protection or related fields. Technical briefers should prepare briefing materials in support of the spokesperson, for use in briefings for news media, for example, as necessary to deal with topics and questions relating to the subject matter of their expertise.

PUBLIC COMMUNICATION TASKS

3.106. The selection process for suitable individuals for core public communication tasks and auxiliary tasks should take into account the specific skills necessary and the job descriptions for each role (e.g. spokesperson, technical briefer, public information officer), as well as the personal characteristics necessary to perform under circumstances of high demand and high stress in an emergency.

3.107. The capacity for performance and the resilience necessary for roles in public communication should be matters for consideration. Personal characteristics should include the ability to be effective in difficult situations, to solve problems effectively and to cope in extraordinary, unpredictable and trying circumstances.

Core public communication tasks

Production and writing

3.108. For efficient communication in an emergency, various materials should be prepared to the extent possible at the preparedness stage. These materials should include, but are not limited to, templates for press releases and statements, presentations for briefings for news media, background information, and sample questions and answers.

Relations with traditional media and online news media

3.109. Relations with traditional media (e.g. the press, television and radio stations) and online news media should be developed and maintained to enable interactions, communication and

liaison with journalists for media outlets such as newspapers, news magazines and television and radio stations, and for online news sites.

3.110. Key journalists and news media should be identified, to the extent possible, at the preparedness stage. Routine communication should be established with the journalists identified.

Social media platforms

3.111. Arrangements should be made for a presence on social media platforms in an emergency in order to disseminate information, to respond to misinformation and rumours, and to respond to enquiries as necessary and as possible.

3.112. Such arrangements should include the provision of sufficient human resources and infrastructure, and the development of standard operating procedures, including an expedited approval process. These arrangements should allow for a timely response to questions on relevant social media platforms.

3.113. Relevant social media platforms should be identified, to the extent possible, at the preparedness stage. The decision on which social media platforms to use should be made on the basis of their usage and their audience.

3.114. Organizations should have clear guidelines in place for the official use of social media platforms by members of response organizations. Organizations should have a clear code of conduct in place for the private use of social media platforms by members of response organizations. This is because messages posted in a private capacity could be mistaken for official information if they include comments on an emergency (see para. 2.2.73.)

Monitoring of the media

3.115. Media monitoring in a nuclear or radiological emergency is the process of reading, watching or listening to various media sources and looking for the inclusion of specific keywords or topics of interest in relation to the emergency. Media monitoring should be conducted by using appropriate resources and technical systems to monitor traditional media, online news media and social media.

3.116. Media monitoring should be used to obtain data for use in strategic planning for public communication, and in relations with traditional media and relations on social media platforms.

3.117. Data from media monitoring should be used to enable public information officers to know what concerns the public, what information is getting through to the public, and how information is being interpreted. The data should also be used to help to identify misconceptions, rumours and incorrect and misleading information (i.e. misinformation) that might be circulating in an emergency.

3.118. Media monitoring should be used to provide access to potentially valuable information for the response. For example, real-time information from eyewitnesses or live coverage could help by raising awareness of the situation and could help in identifying hazards and problems.

Internal communication

3.119. Internal communication should be used to inform members of response organizations about an emergency and the emergency response and to meet their needs for information. Internal communication in this context should not include operational communication for organizing the emergency response. Internal communication should be a part of public communication and it should not include confidential or proprietary information.

3.120. Members of response organizations should be able to act as channels for public communication. Arrangements should be made and should be communicated by means of internal communication to ensure that members of response organizations who are contacted by journalists know to refer such requests to the public information officer section.

Other public information activities

3.121. Other public information activities are activities other than those conducted as public information for traditional media, online news media and social media. Other public information activities should include communication with interested parties, as appropriate, to provide additional information on emergency preparedness and response, as necessary, to the public. Such activities should include, as appropriate, newsletter services and two-way communication, including, for example, telephone enquiry hotlines and public meetings.

Online communication

3.122. Those public information officers responsible for online communication should be responsible for making messages of the response organization available on its web site. The maintenance of an emergency web page when activated for a severe emergency should also be a responsibility of the public information officers responsible for online communication.

3.123. The public information officers responsible for online communication should be in close contact with the public information officers responsible for online communication on social media platforms.

Auxiliary public communication tasks

Logistics and technical support

3.124. Logistics and technical support for the public information officer section should be provided either by the logistics section within the unified command and control system or by the public information officer section's own logistics section. Logistics and technical support functions should include the setting up and maintenance of an off-site public information centre, telephone enquiry hotlines and facilities for operation of the public information officer section.

3.125. Facilities for operation of the public information officer section should include infrastructure for telecommunication and information technology, as well as the technical systems and administrative arrangements necessary for briefings for news media.

Translation services

3.126. Requirement 10 of GSR Part 7 [2] (para. 5.45) requires that information on the response to a nuclear or radiological emergency, for facilities in category I and II and areas in category V, "shall be provided in the languages mainly spoken by the population residing within the emergency planning zones and emergency planning distances" (see para. 1.13).

3.127. Capabilities for any necessary translation services should be arranged at the preparedness stage for information to be prepared for public communication during an emergency response for facilities and activities and areas in other emergency preparedness categories (see 1.14 Requirement 4 of GSR Part 7 [2], para. 4.19 and Table 1).

3.128. The capabilities for translation services should be adequate to provide translations into languages that could be relevant for public communication during an emergency response. This should include capabilities to translate to and from all languages spoken by the population, and capabilities to translate from these languages to English and vice versa.

3.129. Consideration should be given to the use of translation services for languages spoken among foreign nationals living in areas affected by an emergency as well as languages spoken

by the populations of neighbouring States. Plain language background materials in relevant languages should be developed at the preparedness stage.

3.130. Where national legislation requires that communication be conducted in more than one official language, mechanisms should be developed at the preparedness stage to ensure that the need for translation does not delay the release of information.

COMMUNICATION WITH AND CONSULTATION OF INTERESTED PARTIES

3.131. An interested party is typically a person or company with a concern or interest in the activities and performance of an organization [8] [17] The public communication programme and the public communication plan should include interaction with interested parties at the emergency preparedness stage and should include arrangements for communication with and consultation of interested parties in the course of an emergency response, as appropriate (see Fig. 1).

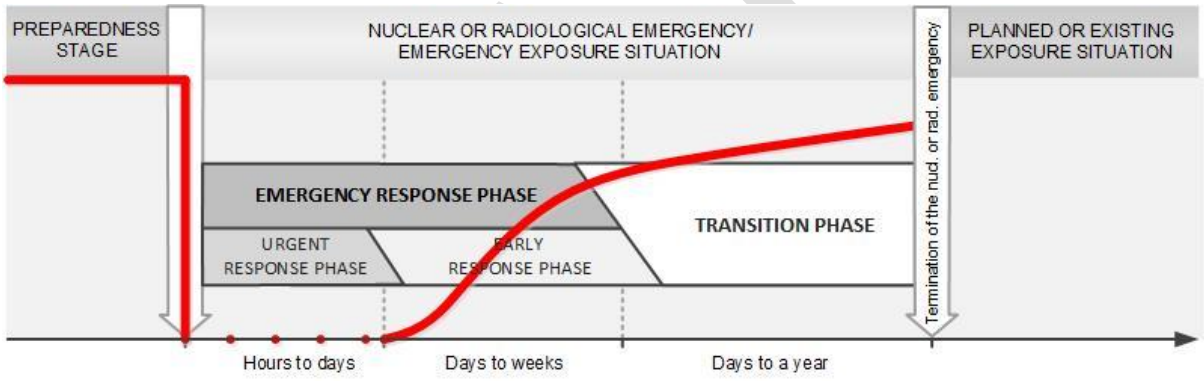

FIG. 1. Communication with and consultation of interested parties in the course of a nuclear or radiological emergency. (From GSG-11 [7], Fig. 4, p.80.) [Figure to be edited.]

3.132. Key interested parties should be identified to the extent possible at the preparedness stage. Examples of key interested parties are presented in para. 4.38.

[17] The IAEA Safety Glossary, 2018 Edition [8], defines 'interested party' as a person, company, etc., with a concern or interest in the activities and performance of an organization, business, system, etc. The term interested party is used in a broad sense to mean a person or group having an interest in the performance of an organization. Those who can influence events may effectively become interested parties — whether their 'interest' is regarded as 'genuine' or not — in the sense that their views need to be considered. Interested parties have typically included the following: customers, owners, operators, employees, suppliers, partners, trade unions; the regulated industry or professionals; scientific bodies; governmental agencies or regulatory bodies (national, regional and local) whose responsibilities may cover nuclear energy; the media; the public (individuals, community groups and interest groups); and other States, especially neighbouring States that have entered into agreements providing for an exchange of information concerning possible transboundary impacts, or States involved in the export or import of certain technologies or materials.

3.133. Regular communication with and consultation of key interested parties should be established at the preparedness stage to support greater understanding of protective actions or other response actions. This regular communication should enhance acceptance of decisions taken in a nuclear or radiological emergency.

3.134. The communication and consultation in an emergency should follow the principles of public communication (see paras 2.2.4–2.2.41) to gain and to maintain trust on the part of the public. Established public communication networks should be a useful means to support consistent messaging in an emergency.

3.135. An evaluation should be carried out to determine perceptions of radiological health hazards and radiation related risks on the part of different interested parties, the channels of communication that interested parties use, and their differing needs and priorities.

3.136. Measures for such an evaluation should include the monitoring of public opinion (e.g. by means of surveys), discussions in person and public meetings. Observations and lessons from the results of this evaluation should be incorporated into the public communication strategy.

3.137. The most effective public communication tools for reaching various interested parties and the specific needs of interested parties for background information should be identified on the basis of the evaluation.

3.138. Such an evaluation should be conducted regularly as the perceptions, needs and priorities of interested parties could change over time. Arrangements should be adapted accordingly.

3.139. Communication with and consultation of interested parties should be tested regularly during emergency exercises.

PUBLIC COMMUNICATION TOOLS

3.140. The following communication tools should be used as appropriate for effective public communication in an emergency: press releases; statements for television and radio stations; briefings for news media; postings and communication on social media platforms; telephone enquiry hotlines; background information material; an emergency web page; and maps and mapping products.

3.141. A listing of advantages and disadvantages of these and other communication tools is provided in Annex III. Example templates for press releases adapted for different types of emergencies are provided in appendix I of Ref. [10].

Press releases

3.142. Templates for press releases in a nuclear or radiological emergency should be based on the organization's standard templates for press releases. The template should include the following:

(a) The issuing organization's name and logo;

(b) A clear indication that it is a press release on an emergency;

(c) The date and the time (in both local time and universal coordinated time (UTC));

(d) Contact details for enquiries from the news media or the public;

(e) Space for details of the emergency.

3.143. Generic templates for initial press releases in an emergency only should be prepared at the preparedness stage to enable a quick activation of the initial public communication response.

3.144. On the basis of the communication strategy, various generic templates should be prepared for initial press releases covering possible scenarios as identified in the communication strategy. These scenarios should include, as appropriate, an accident at a nuclear power plant, a lost radioactive source, and a nuclear or radiological emergency initiated by a nuclear security event.

3.145. The approval process for an initial press release should be such that a target time could be met for issuing the initial press release within one hour of activation by the public information officer of the public communication response.

Preliminary statement

3.146. A template of a generic preliminary statement should be prepared and approved at the preparedness stage for immediate release, if deemed necessary by the lead public information officer, in the public communication response to a nuclear or radiological emergency (see para. 2.2.63).

3.147. The availability and use of such a generic preliminary statement should enable immediate communication (including communication on social media platforms) without information specific to the event being available.

3.148. The use of a generic preliminary statement should contribute to limiting the spread of rumours and to gaining and maintaining trust on the part of the public in the public communication response. An example template of such a preliminary statement is provided in Annex I.

Statements for television and radio stations

3.149. Under the following circumstances, a spokesperson should give a first statement for television and radio stations simultaneously with the issuing of a first press release or as soon as possible afterwards:

(a) When considerable demand for such a statement is expressed in the news media or on social media platforms; or

(b) When the lead public information officer considers that such a statement would be beneficial for explaining the circumstances of the emergency to the public and for gaining and maintaining trust on the part of the public.

3.150. Arrangements should be made to identify, to the extent possible, possible locations for making statements for representatives of television and radio stations. These locations should not be in areas that might be subject to restrictions on access for reasons of safety or security. The locations should be easily accessible by representatives of television and radio stations.

3.151. Representatives of television and radio stations should if possible be given an opportunity to record a statement or to broadcast a statement live themselves.

3.152. If the lead public information officer deems it appropriate, such statements should be recorded by the organization and should be made available on the organization's web site, to the news media and on social media platforms. This might be necessary owing to time constraints or organizational constraints, for example.

3.153. If the lead public information officer deems it appropriate, such statements should also be provided via live streaming on various web sites.

Briefings for news media

3.154. Briefings for news media should be conducted when there is significant new information available pertaining to an emergency or when there is high interest in the news media. Guidance on briefings for news media can be found in Section 4 PC-IS.13 of Ref. [10].

3.155. Arrangements should be made to identify, to the extent possible, possible locations for briefings for news media. These locations should not be in areas that might be subject to restrictions on access for reasons of safety or security. The locations should be easily accessible by representatives of the news media.

3.156. Arrangements should be made to ensure that the following necessary infrastructure for briefings for news media is available at these locations to enable news media representatives who are attending to be provided with information and to process and communicate the information received:

(a) An audio system;

(b) A means for projecting or presenting text, charts, photographs, graphics, videos, etc.;

(c) A power supply for equipment of news media representatives;

(d) Internet access.

3.157. The capacity of the locations should be such as to enable news media representatives to be accommodated adequately for the possible scale of an emergency and of the public communication response.

Postings and communication on social media platforms

3.158. A strategy for public communication by means of social media platforms should be followed at the preparedness stage. The public information officers responsible for online communication on social media platforms should set up accounts for the response organization on the most relevant social media platforms to reach a maximum number of users and to gain the necessary experience.

3.159. Communication on the most relevant social media platforms should be continuous and information should be shared with followers regularly at the preparedness stage. This will help in gaining trust on the part of the public, in gaining an audience and in ensuring that the use of social media platforms in an emergency will not be new for the public information officers.

3.160. Those responsible for public communication in an emergency should take into account that the use of social media platforms will be the preferred means for making enquiries and receiving information for many audiences. Social media platforms should be used as an effective method of reducing the need for individual enquiries by other means of public communication, such as telephone enquiry hotlines and email.

3.161. Those responsible for public communication in an emergency should anticipate that answers provided to questions raised on social media platforms will be read by other users, including users in the news media.

Telephone enquiry hotlines

3.162. Arrangements should be made at the preparedness stage to ensure the availability of telephone enquiry hotlines and of trained operators to answer telephone enquiries from the public during a nuclear or radiological emergency. The arrangements for telephone enquiry hotlines for the public communication response should be scalable to the differing nature and severity of an emergency.

3.163. Arrangements should be made at the preparedness stage for the use of prerecorded messages for telephone enquiry hotlines, and for using telephone enquiry hotlines to provide the latest press release and recent information on protective actions and other response actions.

3.164. Arrangements should be made at the preparedness stage to ensure that telephone enquiries can be dealt with in the languages mainly spoken by the population.

Background information material

3.165. Background information material in support of the public communication response should be prepared at the preparedness stage.

3.166. Background information material should be such that it can be made available on the organization's web site, in traditional media and online news media, at public meetings, on social media platforms and on request. Background information material should include a catalogue of frequently asked questions and answers.

3.167. Background information material should include maps, graphics and basic information on the uses of nuclear energy, radiation protection, exposure pathways, protective actions and other response actions, the roles and responsibilities of response organizations, and types of

nuclear or radiological emergencies. (See Annex IV for a list of useful background information material.) The background information material should be regularly reviewed and revised as appropriate.

3.168. Requirement 10 of GSR Part 7 [2] (para. 5.45) requires that "For facilities in category I or II and areas in category V, arrangements shall be made to provide the permanent population, transient population groups and special population groups or those responsible for them and special facilities within the emergency planning zones and emergency planning distances…, before operation and throughout the lifetime of the facility, with information on the response to a nuclear or radiological emergency" (see para. 1.13 and see 1.14Requirement 9 of GSR Part 7 [2], para. 5.38).

3.169. Requirement 10 of GSR Part 7 [2] requires that "This information shall include information on the potential for a nuclear or radiological emergency, on the nature of the hazards, on how people would be warned or notified, and on the actions to be taken in such an emergency."

3.170. Background information material on the response to an emergency should be incorporated, as appropriate, into communication with interested parties (see paras 3.131–3.139).

Emergency web page

3.171. Arrangements should be made for all official information in a nuclear or radiological emergency and for contact details for use by the news media and by the public to be made available on the organization's web site.

3.172. For a severe emergency with significant interest on the part of news media and the public, a specific emergency web page should be made available. The emergency web page should follow a graded approach (see para. 1.28) to simplify its use and its updating by public information officers. The emergency web page should be prepared at the preparedness stage.

3.173. The design of the emergency web page and arrangements made for its activation and use should be suitable for use by the public information officer section.

3.174. In particular, the web page and arrangements should allow those public information officers responsible for online communication, as well as others in the public information officer section, to upload material in predefined formats and without the need for technical

support. Such material should include press releases, video statements, background information and other relevant official information.

3.175. Arrangements should be made for the incorporation of a specific group in the public information officer section dedicated to responding on the emergency web page to misinformation and rumours. Rumours on social media platforms should also be responded to. Links to relevant information on the emergency web page and/or other web sites where accurate factual content is available should be provided on social media platforms.

3.176. The emergency web page should have a clear, plain design for usability and ease of navigation and it should be readily displayed on mobile devices. The use of colour and other design elements should differentiate it clearly from any promotional content or advocacy material elsewhere on the web site.

3.177. The design of the web page should ensure ease of access to the extent possible for all groups of the population, including special groups such as those with impaired vision or hearing.

3.178. The emergency web page should be designed in such a way that it displays only official information on the emergency. It should not include promotional content or advocacy material or other content that could be considered inappropriate in the context of an emergency. The emergency web page should not be accessible for the public when there is no emergency that warrants its activation.

3.179. The organization's web site, including the emergency web page, should be hosted in such a way that the capacity of the server is sufficient for the volume of traffic to be expected in an emergency. The capacity of the server should undergo regular and realistic testing.

3.180. Disruption of the emergency web page that makes it unreachable for a long period should be avoided. Such disruption could undermine the organization's trustworthiness and trust on the part of the public in the emergency response.

3.181. Activation of the emergency web page should be included in relevant training.

PUTTING RADIOLOGICAL HEALTH HAZARDS IN PERSPECTIVE

3.182. In a nuclear or radiological emergency, the response organizations should expect to receive questions from the news media and the public on potential adverse consequences for

human life, health, property and the environment. This has been demonstrated by experience from the response to past emergencies.

3.183. In the Report by the Director General of the IAEA on the Fukushima Daiichi accident [12], it was concluded in the observations and lessons that "Factual information on radiation effects needs to be communicated in an understandable and timely manner to individuals in affected areas in order to enhance their understanding of protection strategies, to alleviate their concerns and [to] support their own protection initiatives" [12].

3.184. Requirement 13 of GSR Part 7 [2] (para. 5.72) requires that "The government shall ensure that a system for putting radiological health hazards in perspective in a nuclear or radiological emergency is developed and implemented with the following aim:

- "To support informed decision making concerning protective actions and other response actions to be taken;
- "To help in ensuring that actions taken do more good than harm;
- "To address public concerns regarding potential health effects."

3.185. A report by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) [13] (see Annex V) distinguishes between: .

(a) health effects that are objectively demonstrable and therefore can be attributed[18] to radiation exposure; and

(b) radiation 'risks', or possibilities of harm usually associated with radiation exposure, which could be subjectively inferred in possible or future exposure situations, and are used mainly for radiation protection purposes.

3.186. Health effects that are objectively and scientifically attributed to radiation exposure have been considered in the past[19] in parallel with those health effects that are possibly associated with radiation exposure in a large population and cannot be demonstrated but may be subjectively inferred. This has created communication problems, which on occasion have

[18] In the context of the UNSCEAR report [13] and this Safety Guide, attributability refers whether or not a manifest health effect in an individual or a manifest change in frequency of health effects in a population is capable of being ascribed as having [been] induced by radiation exposure.

[19] For example, in the Report by the Director General of the IAEA on the Fukushima Daiichi accident [12] it was stated that "the risks of radiation exposure and the attribution of health effects to radiation need to be clearly presented to stakeholders, making it unambiguous that any increases in the occurrence of health effects in populations are not attributable to exposure to radiation if levels of exposure are similar to the global average background levels of radiation."

been detrimental to the people to be protected, resulting in psychological harm to the people affected.

3.187. Radiological health hazards in a nuclear or radiological emergency should be explained and put in perspective in clear and accurate yet comprehensible language. The system of putting radiological health hazards in perspective is important to explain any technical or scientific information in a nuclear or radiological emergency. It is an equally important to be used when addressing the primary public concerns (i.e. "Am I safe?") in a nuclear or radiological emergency. In the context of this Safety Guide, the term 'radiological health hazards' is used in relation to health effects that can be attributed to exposure to radiation.

3.188. The system for putting radiological health hazards in perspective in an emergency should be developed at the preparedness stage for use in the public communication at any stage.

3.189. The system for putting radiological health hazards in perspective should be developed with the involvement of relevant technical experts as well as professionals in public communication. The system should be developed in consultation with the public and other interested parties.

3.190. The concepts underlying the system for putting radiological health hazards in perspective should be sufficiently well understood by those involved in the public communication to ensure they are consistently reflected at any stage. The system should be tested with selected audiences for its suitability and adequacy prior to its adoption.

3.191. The system for putting radiological health hazards in perspective should be suitable for use in informing the public and other interested parties of the reasons for complying with instructions on protective actions and other response actions (or as appropriate, why no specific emergency response actions are necessary).

3.192. The system for putting radiological health hazards in perspective should be used to address concerns of the public about potential radiation induced health effects. Those responsible for public communication should consider maintaining regular communication with and consultation of the public and other interested parties on concerns about potential radiation induced health effects at the preparedness stage as well as during an emergency response to support the effective implementation of protective actions and other response actions.

3.193. The system for putting radiological health hazards in perspective should support effective public protection and should not prevent implementation of additional measures should they be justified and optimized. Thus, such a system should not substitute the need for authorities to further implement monitoring and assessments, medical screenings and diagnosis as well as the need to conduct epidemiological studies, when appropriate, with the aim to make an accurate attribution of radiation induced health effects after a nuclear or radiological emergency. Instead, it is intended to facilitate an effective communication when detailed assessments are not yet available.

3.194. The following should be considered in developing a system for putting radiological health hazards in perspective:

(a) The rationale for taking protective actions and other response actions in a nuclear or radiological emergency;

(b) The health effects that have been scientifically and objectively attributed to exposure to radiation and the association of such health effects with an indicator such as estimated doses or measured quantities;

(c) Public concerns and the need to respond to them in clear and comprehensible language;

(d) The perception of radiological health hazards on the part of the public in comparison to that of technical experts or among different experts.

3.195. The inference of radiation risks should continue forming a basis for precautionary radiation protection measures in normal situations primarily (i.e. planned and existing exposure situations) to be applied even in the longer term after the nuclear or radiological emergency as long as they are justified.

3.196. UNSCEAR "does not recommend multiplying very low doses by large numbers of individuals to estimate numbers of radiation induced health effects within a population exposed to incremental doses at levels equivalent to or lower than natural background levels" [13] (see Annex V).

3.197. UNSCEAR also discusses that the public health authorities may need to make such projections of the number of radiation induced health effects within a population for comparative purposes when allocating resources, but cautious that such projections should not lead to inference that the projected health effects were anything other than hypothetical (see Annex V).

3.198. Hypothetical calculations of numbers of health effects associated with exposure at low doses and low dose rates among a large population may be used in justification and optimization of protection and safety. However, such hypothetical calculations are open to misinterpretation and misrepresentation, and they should not be used by those responsible for public communication on radiological health hazards.

3.199. Experience has shown that the models used to provide for precautionary radiation protection measures at low doses and low dose rates in normal situations (i.e. planned exposure situations) and associated regulatory dose limits were understood, primarily by the public and non-technical community, as demarcations for a safe radiation exposure levels. Thus, this should be considered in the public communication strategy to avoid any misunderstanding and to bring clarity on the applicability of the models and on radiological health hazards related to low doses and low dose rates taking into account the UNSCEAR 2012 Report [13].

3.200. An example system for putting radiological health hazards in perspective, developed taking into account the recommendations given in para. 3.194, is provided in the Appendix.

3.201. In a nuclear or radiological emergency, the public's perception of hazards may be associated not only with radiological health hazards but also with non-radiological factors (such as anxiety and stress and their possible effects on health). The relevant authorities should differentiate between radiological health hazards and non-radiological factors in responding to questions of the public such as "Am I safe?".

3.202. If the radiological situation allows, the relevant authorities may consider answering questions of the public by referring, as appropriate, to the third level of the proposed example system ('no attributable radiation induced health effects') in the Appendix.

3.203. To avoid confusion and misleading the public into overestimating the radiological consequences, non-radiological considerations should be addressed separately from radiological consequences in a response to such questions raised by the public.

3.204. An example graphic for the system for putting radiological health hazards in perspective for use in the public communication is provided in Annex VI.

TRAINING AND EXERCISES

Training

3.205. Public information officers and others involved in the public communication response such as senior managers, spokespersons and technical briefers, and emergency response personnel, should be prepared for situations in which members of the public or representatives of the news media address questions to them, including questions raised on social media platforms. Regular media training should be conducted on how to respond in such situations.

3.206. Personnel who are part of or who could be part of the unified command and control system, including first responders, should be provided with sufficient information to understand the arrangements for public communication. Such personnel should also receive at least basic training in public communication. The basic training should cover possible difficulties in discussions with the news media, the public and other interested parties in an emergency.

3.207. Public information officers should be trained on strategies for communication in an emergency, risk perception and its social context, and the importance of communication with and consultation of interested parties, as well as on understanding terminology and using it correctly (e.g. in relation to hazards and risks).

3.208. In accordance with their respective roles and responsibilities, public information officers should be trained in:

(a) Preparation of clear, accurate and consistent messaging in a timely and transparent manner (see para. 1.24);

(b) Coordination of all public information;

(c) The characteristics and use of channels of communication, platforms and tools;

(d) Best practices in communication on radiological health hazards and radiation related risks;

(e) Making statements and giving interviews on television and radio stations, video and audio.

3.209. Additionally, training of public information officers should be integrated into training programmes for emergency preparedness and response to ensure appropriate training of all

personnel for emergency preparedness and response. Specific training of public information officers should include:

(a) Basic knowledge of the emergency management system (see para. 3.1);

(b) Basic knowledge of relevant scientific and technical subject matter;

(c) Training of technical briefers and other personnel, including first responders, for their role in public communication, to enhance their effectiveness and their understanding of the demands;

(d) Training on how to convey scientific concepts clearly, such as the basics of radiation and radiological health hazards, radiation related risks and emergency response actions;

(e) Training on bilateral and multilateral liaison with other States to ensure that any possible transboundary impacts on people, property and the environment in an emergency are considered and to provide for any necessary exchange of information.

3.210. Spokespersons and technical briefers, once identified, should be trained in dealing with news media; in preparing for and giving interviews and on-camera statements; in demonstrating understanding and empathy; and in dealing with strong feelings and hostile questioning. The training should include elements on communicating radiological health hazards and radiation related risks, and on communicating in an emergency, including associated working sessions and exercises.

3.211. Training of spokespersons should include training on protecting confidential or classified information, or information that is subject to legal restrictions, and on avoiding speculation and avoiding making judgements and inappropriate statements.

3.212. Training programmes on public communication:

(a) Should be integrated into the organization's training programme for emergency preparedness and response;

(b) Should be regularly reviewed and updated to ensure that observations and lessons are current and that training is consistent with meeting requirements for emergency preparedness and response;

(c) Should be mandatory for those with responsibilities in emergency response, such as senior managers, technical experts, emergency response personnel, public information

officers and spokespersons, and should be in accordance with their duties in emergency response;

(d) Should be scheduled regularly.

Exercises

3.213. Exercises, including drills, should be conducted to test and validate the effectiveness of the public communication programme, for the purpose of continuous improvement and necessary adjustment of plans, procedures and response arrangements. Drills and exercises should be as realistic as possible:

(a) A programme of regular drills and exercises for the public communication programme should be integrated into the drills and exercises of the emergency preparedness and response programme;

(b) Regular drills and exercises should be conducted to test the knowledge and expertise of senior managers, technical experts, emergency response personnel, public information officers, spokespersons and others responsible for public communication;

(c) Regular exercises should include all national authorities with responsibilities in emergency response;

(d) The use of contracted services for public communication should be periodically tested in drills and exercises;

(e) Drills focusing only on public communication should be carried out;

(f) Spokespersons should be regularly tested in drills and exercises, and their performance should be assessed by means of mock media interactions;

(g) Others with specified responsibilities in the public communication programme, such as technical briefers and emergency response personnel, should be regularly tested in drills and exercises;

(h) Intergovernmental organizations, as part of their programmes of drills and exercises, should exercise public communication to ensure consistent messaging as described in the Joint Radiation Emergency Management Plan of the International Organizations [4] (see para. 3.69).

3.214. The drills and exercises for the public communication programme should include, to the extent possible, tests of the communication strategy, including processes and procedures for:

(a) Provision of clear, accurate and consistent messaging in a transparent and timely manner (see para. 1.24);

(b) Collection and assessment of information in a public communication response;

(c) Coordination of response organizations and other authorities providing official information;

(d) Development of messages, including communication of uncertainties;

(e) Necessary coordination and consistency of messaging and necessary approval of messages;

(f) Dissemination of information;

(g) Media monitoring.

3.215. Arrangements should be made for an evaluation, a review and a report following the conclusion of each drill and exercise. The purpose of the evaluation and review should be to identify gaps, observations and lessons. The report should recommend any necessary improvements for an effective public communication response within the emergency management system.

3.216. Arrangements should be made for regular drills and exercises to ensure that the skills of public information officers, spokespersons, technical briefers and others responsible for public communication are sufficient for an emergency response.

4. ARRANGEMENTS FOR PUBLIC COMMUNICATION IN EMERGENCY RESPONSE

GENERAL

4.1. Section 4 provides recommendations and guidance for public communication in the response to a nuclear or radiological emergency. As an effective public communication response in an emergency is contingent on the level of preparedness, public communication in emergency response should be subject to the arrangements recommended in Section 3.

4.2. Public communication should be part of the emergency management system in an emergency response. Those responsible for public communication should be involved from the initiation of an emergency response. Relevant information on facilities and activities should be shared at the preparedness stage with those responsible for public communication in an emergency.

ACTIVATING A PUBLIC COMMUNICATION RESPONSE

4.3. Those responsible for public communication in an emergency should anticipate that the public, news media and other interested parties will demand detailed information from response organizations immediately after an emergency is declared. However, not all relevant information will be available for the public communication response.

4.4. An organization's public communication response should be activated as soon as there are indications of an emergency. Public communication should be listed as a priority in an organization's internal notification and alarm system for an emergency.

4.5. The lead public information officer should have immediate and continuing access to decision makers in the response to an emergency as part of the unified command and control system. This access to decision makers should ensure the earliest possible participation in the response by public information officers. Access to decision makers should also ensure that those responsible for public communication have access to the most relevant and recent information available.

Preliminary statement

4.6. The lead public information officer should have the authority to release an approved preliminary statement (see para. 3.146), before information on an emergency becomes available, as appropriate, if there are requests for information by the news media or if an emergency is under discussion on social media platforms.

Spokespersons and technical briefers

4.7. The spokesperson should address the news media in a timely manner and at regular intervals, by means of statements to camera and/or audio statements or recorded video, or in briefings for news media. The spokesperson should provide the news media with statements and quotes for print, audio and video communications.

4.8. Technical briefers should assist the spokesperson to provide information on the subject matter in which they are technical experts, as deemed necessary for the emergency response.

4.9. Spokespersons and technical briefers suitable for the emergency response should be appointed from among those identified and trained at the preparedness stage (see paras 3.100–3.105).

PUBLIC COMMUNICATION TASKS

4.10. Public communication tasks should be performed by the public information officer section. The tasks should be coordinated by the lead public information officer (see Annex II).

4.11. The public communication response of the lead public information officer should be based on a graded approach (see para. 1.28). The graded approach should be used to determine whether the lead public information officer will work alone in the public communication response or will work with a public information officer section of appropriate size.

Core public communication tasks

Strategic planning

4.12. On the basis of the communication strategy and the communication plan developed at the preparedness stage, the lead public information officer should conduct strategic planning for the public communication response to the emergency and should set priorities.

4.13. Strategic planning for the public communication response to the emergency should include:

(a) making an assessment for public communication purposes on the basis of data from media monitoring;

(b) specification of key messages;

(c) identification of key channels of communication and key audiences;

(d) making decisions on public communication to be undertaken, in accordance with decisions made in the unified command and control system.

Production and writing

4.14. Specific information material should be prepared for the public communication response (see para. 3.108), in addition to materials prepared at the preparedness stage. This information material should be disseminated by means of the public communication tools that were identified at the preparedness stage.

4.15. The information material should include, but is not limited to, press releases, statements, presentations for briefings for news media, background information that was not prepared in advance, frequently asked questions and answers, and recorded video statements.

4.16. This information material should be used as appropriate by those responsible for public communication who are responsible for relations with traditional media and online news media, relations on social media platforms and telephone enquiry hotlines.

Relations with traditional media and online news media

4.17. Information should be provided to traditional media (e.g. the press, television and radio stations) and online news media by means of briefings for news media, statements to camera, recorded video statements, quotes and interviews (see para. 3.109).

4.18. During an emergency, public information officers should maintain relations with traditional media and online news media. Public information officers should be available at all times for dealing with enquiries by telephone and by email from the news media.

Social media platforms

4.19. Public information officers responsible for online communication on social media platforms (see para 3.111–3.114) should ensure that official information on an emergency is made available on social media platforms as early as possible.

4.20. Public information officers should ensure that communication with social media users is established and maintained as appropriate. Links to relevant information on the emergency web page and/or other web sites where accurate factual content is available should be provided on social media platforms.

Monitoring of the media

4.21. Media monitoring (see para. 3.115) should be established or extended as soon as possible for sources in traditional media, online news media and social media. Keywords and search terms selected at the preparedness stage should be reviewed and should be complemented as necessary with keywords particular to the emergency, such as the name of the facility or its location.

4.22. Particular attention should be paid to identifiers such as 'hashtags' or similar markers used by the response organizations, the news media or the public to identify messages relating to the emergency.

4.23. Data from media monitoring should be used to identify misinformation and rumours and topics of particular interest to the public, and to assess whether additional public information is necessary.

4.24. Data from media monitoring should be made available continuously to the public information section and the unified command and control system.

Internal communication

4.25. Internal communication (see para. 3.119) should be used to provide response organizations and relevant persons who are not directly involved in the response with information that is to be issued to the news media and the public.

4.26. Such internal communication should be carried out when public information is provided to external audiences or earlier. If information is provided by internal communication before public information is provided to external audiences, the information should be provided

solely on a need-to-know basis and confidentiality should be maintained to avoid intentional or unintentional unofficial release of the information.

Other public information activities

4.27. Other public information activities (see para. 3.121) should be conducted to coordinate and organize the public communication response for interested parties, as appropriate, and to provide additional information on the emergency to the public, as necessary.

Online communication

4.28. All official information should be made available on the organization's web site immediately in an emergency response (see para. 3.122).

4.29. An emergency web page should be activated in an emergency response that is likely to be of great interest to the news media and to the public. Activation of an emergency web page should also be considered in the case of an event that receives attention in the news media owing to misinformation or rumours.

4.30. The emergency web page should be monitored constantly by technical staff who should take action if the volume of traffic is expected to exceed the capacity of the server and to jeopardize the availability of the web site during the emergency response.

Auxiliary public communication tasks

4.31. Auxiliary public communication tasks, such as logistics, technical support and translation services, should be activated as necessary in support of an emergency response (see paras 3.124–3.126).

4.32. If deemed necessary by the lead public information officer, telephone enquiry hotlines, public information centres, facilities for operation of the public information officer section and systems for coordination of the public communication response should be activated as soon as possible in an emergency.

4.33. These activations should be in accordance with the public communication plan. The activations should include telecommunication and information technology infrastructure, as well as the technical systems and administrative arrangements for briefings for news media.

4.34. All official information on the response to a nuclear or radiological emergency, for facilities in category I and II and areas in category V, should be provided in the languages mainly spoken by the population residing within the emergency planning zones and emergency planning distances (see para. 1.13).

4.35. Any necessary translations should be provided for information to be prepared for public communication during an emergency response.

4.36. Translations should be provided in languages that could be relevant for public communication during the emergency response. This should include translations to and from all languages spoken by the population, and translations as appropriate from these languages to English and vice versa.

4.37. If the lead public information officer deems that there is significant interest in the emergency on the part of international news media, relevant official information should be translated into English as necessary. However, the need for translation should not delay the first issue of information in the languages mainly spoken by the population. (See para. 3.126.)

COMMUNICATION WITH INTERESTED PARTIES

4.38. Interested parties identified at the preparedness stage or during the emergency response should be provided with relevant information about an emergency (see paras 3.131–3.139). Experience from past emergencies shows that interested parties in an emergency response include, but are not limited to:

(a) The population affected (directly or indirectly) by an emergency;

(b) The first responders and members of the response organization;

(c) Those working for response organizations but not directly involved in the response;

(d) The news media;

(e) Community leaders, business leaders and the scientific community, who help to disseminate relevant information to their respective audiences;

(f) International and non-governmental organizations;

(g) Personnel in the agricultural, fishing and forestry sectors, and owners affected and concerned for property and for the environment;

(h) Operating organizations, registrants and licensees, and suppliers of and for nuclear power plants or other facilities and activities;

(i) The public (locally, nationally, regionally and internationally);

(j) Health professionals;

(k) Governmental organizations and government officials, including the regulatory body.

4.39. The concerns and information needs of interested parties should be dealt with in a timely manner on the basis of the public communication plan developed at the preparedness stage and the strategic planning for public communication of the lead public information officer. Public information officers should make use of the topics of interest identified at the preparedness stage, data from media monitoring and relevant information.

4.40. Public information officers should respond to specific concerns and questions of the affected population and other interested parties. Arrangements should be made for setting up dedicated telephone enquiry hotlines, organizing public meetings and answering enquiries by email and on social media platforms. Arrangements should be made to enable communication with interested parties at any time to the extent possible.

COORDINATION OF PUBLIC COMMUNICATION

National coordination

4.41. All public communication of organizations involved in the emergency response, including facilities and activities locally and nationally, should be operational under the unified command and control system to ensure consistent messaging in accordance with the 'one message, many voices' approach (see para. 2.2.35).

4.42. The coordination should ensure that all organizations engaged in the public communication response confine their communication to their respective mandates and areas of responsibility.

4.43. There should be coordination between organizations at state, territory and federal levels, as appropriate to the State.

4.44. Regular briefings for all public information officers and relevant staff should be conducted in person, by video conference or by comparable means. These regular briefings

should be aimed at providing an overview of the emergency and the emergency response actions planned and they should provide a platform for identifying issues and challenges.

International coordination

4.45. Under article 2 of the Convention on Early Notification of a Nuclear Accident [1], "in the event of an accident specified in article 1…, the State Party referred to in that article shall:

(a) forthwith notify, directly or through the International Atomic Energy Agency…, those States which are or may be physically affected as specified in article 1[20] and the Agency of the nuclear accident, its nature, the time of its occurrence and its exact location where appropriate".

4.46. Requirement 10 of GSR Part 7 [2] (para. 5.48) requires that "Arrangements shall be made by response organizations in a State to promptly provide information and advice to its nationals and to those people with interests in other States[21] in the event of a nuclear or radiological emergency declared beyond national borders, with due account taken of the emergency response actions recommended in the State in which the emergency occurs as well as in the State(s) affected by that emergency (see paras 5.73 and 6.14)".

4.47. This requirement should be met by providing public information and advice either directly or through the IAEA to any State that is potentially affected in the emergency for dissemination to its nationals.

4.48. Requirement 9 of GSR Part 7 [2] (para. 5.36) requires that "Arrangements shall be made such that information on emergency conditions, assessments and protective actions and other response actions that have been recommended and have been taken is promptly made available, as appropriate, to all relevant response organizations and to the IAEA throughout the emergency."

[20] Article 1 of the Convention on Early Notification of a Nuclear Accident states that "This Convention shall apply in the event of any accident involving facilities or activities of a State Party or of persons or legal entities under its jurisdiction or control, referred to in paragraph 2 below, from which a release of radioactive material occurs or is likely to occur and which has resulted or may result in an international transboundary release that could be of radiological safety significance for another State. Article 2 states that "The facilities and activities referred to in paragraph 1 are the following: (a) any nuclear reactor wherever located; (b) any nuclear fuel cycle facility; (c) any radioactive waste management facility; (d) the transport and storage of nuclear fuels or radioactive wastes; (e) the manufacture, use, storage, disposal and transport of radioisotopes for agricultural, industrial, medical and related scientific and research purposes; and (f) the use of radioisotopes for power generation in space objects.

[21] Examples of people with interests in other States include people travelling, people working and/or living abroad, importers and exporters, and people working in companies operating abroad.

4.49. The IAEA should be informed of a significant public communication response in order to facilitate the international coordination of public communication.

4.50. The coordination of public communication between participating international organizations should follow the Joint Radiation Emergency Management Plan of the International Organizations [4], in coordination with response organizations to the extent feasible.

PUBLIC COMMUNICATION TOOLS

Press releases

4.51. If a press release is deemed to be necessary on the basis of the nature and severity of the emergency, the target time for issuing an initial press release should be within one hour and its release time should not exceed two hours after activation of the public communication response by the public information officer (see paras 3.142–3.145). To avoid delay, the initial press release should be in general terms and not be detailed.

4.52. Press releases on the emergency should be in plain and comprehensible language and should be issued simultaneously to relevant journalists and media outlets. Press releases should also be made available on the organization's web site and on social media platforms.

4.53. Updates of press releases should be issued regularly as new information becomes available for release.

Statements for television and radio stations

4.54. If there is demand for video material and audio material, a spokesperson should give a first statement for television and radio stations simultaneously with or as soon as possible after issuing a first press release (see paras 3.149–3.153).

4.55. Spokespersons and technical briefers should state what is known, the origin of the available information, what is not known and what is being done to find out more information.

4.56. Spokespersons and technical briefers should refrain at all times from speculation. Spokespersons and technical briefers should be aware that speculation could undermine the organization's trustworthiness, and should be aware that speculation could undermine trust on

the part of the public in the public communication response and in the emergency response generally.

4.57. Key statements should be video recorded and the video recording should be made available on the organization's web site and on social media platforms. A link to the video should be included in press releases to meet the needs of online media and social media platforms.

Briefings for news media

4.58. Briefings for news media or conferences should be conducted when there is significant information on the emergency or a high degree of attention in the news media (see paras 3.154–3.157).

4.59. Regular briefings for news media should be conducted during an emergency, to inform the news media as necessary and to contribute to continuing public communication.

4.60. Procedures for the briefing for news media should be made clear to all spokespersons and technical briefers prior to the briefing. Journalists should be informed of the procedures for the briefing, to the extent possible, before the briefing. Consideration should be given to communicating the policy as to whether and how questions are to be taken and answered.

4.61. A time limit should be set for the duration of the briefing for news media. The time limit for the briefing should be communicated to journalists prior to or at the beginning of the briefing.

4.62. The briefing for news media should be moderated by the lead public information officer, if possible.

4.63. Live streaming or dial-in audio access should be arranged, if possible, for journalists who are unable to attend the briefing for news media in person, such as journalists in other States.

4.64. Briefings for news media should be recorded by means of audio and/or video recording, if possible. A summary of key points of the briefing should be prepared in the form of a press release for issue after the briefing, as appropriate.

4.65. If available, a summary of key points of the briefing for news media should be posted online.

Postings and communication on social media platforms

4.66. Public information officers responsible for online communication on social media platforms should make official information available on relevant social media platforms at the same time as it is made available on the organization's web site and by means of other channels of communication (see paras 3.158–3.160).

4.67. Social media platforms should be used to communicate protective actions for those directly affected by the emergency and to address concerns and questions raised on those and other social media platforms.

4.68. Identifiers such as 'hashtags' for messages should be used on those social media platforms used for public information in an emergency.

4.69. Public information officers responsible for online communication on social media platforms should monitor social media platforms and should respond in a timely manner to concerns, questions and rumours.

4.70. Specific attention should be paid by the responsible public information officers to those social media platforms with institutional accounts on which the organization is active.

Telephone enquiry hotlines

4.71. Telephone enquiry hotlines should be set up for dealing with enquiries from the public, the news media and other interested parties (see paras 3.162–3.164).

4.72. Telephone enquiry hotlines should be adequately staffed to be able to deal with the volume of calls to be expected during a public communication response.

4.73. Staff from technical and scientific support organizations who can answer technical enquiries should be assigned as necessary to assist the staff of telephone enquiry hotlines.

4.74. Staff from technical and scientific support organizations should be involved as necessary in preparing technical briefings for the staff of telephone enquiry hotlines.

4.75. Staff from technical and scientific support organizations should be involved as necessary in preparing information to be made available on the organization's web site and other web sites and on social media platforms, and other public information material.

4.76. Pre-recorded messages for telephone enquiry hotlines should be used to provide the latest press release and recent information on protective actions and other response actions.

4.77. Pre-recorded messages should be used to direct callers to the emergency web page or to social media platforms for the most recently released information on emergency response actions.

Background information material

4.78. Background information material should be made available as appropriate on the organization's web site, at public meetings, on social media platforms, in traditional media and online news media, and on request (see paras 3.165–3.169).

4.79. Background information material should include a catalogue of frequently asked questions and answers. Written background information material may be supported by graphics, such as illustrations or photographs of the facility or of the radiation source concerned. (See Annex IV for a listing of typical background information material.)

4.80. Background information material should be used as appropriate for communicating with the public, especially when little or no information on the emergency is available. Care should be taken that background information material is clearly marked as such and clearly explained, to distinguish it from official information issued on the emergency response.

Emergency web page

4.81. The emergency web page should be activated as outlined in the communication plan, or as deemed necessary by the lead public information officer if significant interest in the news media and among the public is expected (see paras 3.171–3.181).

4.82. The emergency web page should be updated immediately when public information is issued. The emergency web page should provide a compilation of all public information on the emergency.

4.83. The emergency web page should include the latest press release and an archive of all previously issued press releases on the emergency, other statements issued for television and radio stations and video statements, relevant background information and contact details for further enquiries.

Maps and mapping products

4.84. Maps and mapping products should be used to convey information to the public and the news media if possible. Care should be taken to ensure that all maps and mapping products are clearly and accurately labelled and consistently presented. Maps and mapping products should be used as necessary to provide information on the following:

(a) Areas known to be affected or potentially affected by a radioactive release;

(b) Recommendations on protective actions and other response actions, including an urgent protective action planning zone, a precautionary action zone, operational intervention levels, extended planning distances, and ingestion and commodities planning distances[22];

(c) Data from radiation monitoring, including data from aerial surveys;

(d) Data on the dispersion of an airborne plume;

(e) Other relevant data such as data on the population affected or potentially affected, and data on types of livestock and crops affected or potentially affected;

(f) Details of the organization responsible for issuing the maps and mapping products and its authority for issuing maps and mapping products.

[22] The planning zones are defined in the IAEA Safety Glossary, 2018 Edition [8], as follows: Urgent protective action planning zone (UPZ): 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 avert doses off the site in accordance with international safety standards; precautionary action zone (PAZ): 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 reduce the risk of severe deterministic effects off the site; operational intervention level (OIL): a set level of a measurable quantity that corresponds to a generic criterion; extended planning distance (EPD): distance around a facility within which emergency arrangements are made following the declaration of a general emergency to conduct monitoring and to identify areas warranting emergency response actions to be taken off the site within a period following a significant release that would allow the risk of stochastic effects among members of the public to be effectively reduced; ingestion and commodities planning distance (ICPD): distance around a facility within 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.

4.85. Maps and mapping products that are issued subsequently should include data that have become available subsequently. Such data should include data from radiation monitoring that have become available, as appropriate. All products should be regularly reissued as appropriate to include new data that have become available.

4.86. All maps and mapping products should include plain language explanations. Comparisons made to put radiological health hazards and radiation doses in perspective (see paras 3.182–3.204 and the Appendix) should be as clear and comprehensible as possible, yet any plain language explanation must remain accurate to avoid misleading the public (see para. 2.2.29).

International Nuclear and Radiological Event Scale (INES)

4.87. When communicating with the public, States may consider using the International Nuclear and Radiological Event Scale (INES) [14]. INES is intended as a tool for communicating the safety significance of nuclear and radiological events to the public.

4.88. States may use INES on a voluntary basis to rate and to communicate on events that occur within their territory. It is not a notification or reporting system and it should not be used in emergency response. The International Nuclear and Radiological Event Scale User's Manual [14] provides further guidance on the proper use of the INES scale in public communication.

RESPONDING TO MISINFORMATION AND RUMOURS

4.89. Those responsible for public communication in an emergency should expect that misinformation and rumours will be generated in the public domain, both intentionally and inadvertently.

4.90. Public information officers should take immediate action to counteract misinformation and rumours that could affect operations in the emergency response. Arrangements should be put in place to do the following:

(a) To monitor traditional media, online news media and social media platforms and to counteract misinformation and rumours promptly;

(b) To respond to incorrect and misleading information (e.g. incorrect and misleading postings on social media platforms) with accurate information;

(c) To monitor the origin and the spread of any misinformation and rumours and to respond accordingly;

(d) To take account of the concerns of the public and the news media and to provide information correspondingly;

(e) To inform the news media of misconceptions, rumours and incorrect and misleading information (i.e. misinformation) that might be circulating and of their potential harmful consequences;

(f) To ensure that accurate and current information is regularly provided;

(g) To use the organization's web site or emergency web page to issue corrections to the most prevalent and the most harmful misinformation and rumours.

PUBLIC COMMUNICATION FOLLOWING THE TERMINATION OF AN EMERGENCY

4.91. Those responsible for public communication in an emergency should be aware that public communication in an emergency may need to be continued following termination of the emergency.

4.92. Arrangements should be made to ensure that communication with and consultation of interested parties can be continued for as long as there is significant interest. Arrangements should be made in anticipation of increased interest on the part of the public in subjects such as liability and compensation, actions to provide for their wellbeing and health issues.

4.93. Arrangements should be made for responding to questions concerning the immediate and long term consequences of the emergency. Arrangements should be made to continue to inform the public, as appropriate, about protective actions in place and on-going recovery efforts.

5. ARRANGEMENTS FOR PUBLIC COMMUNICATION UNDER PARTICULAR CIRCUMSTANCES

GENERAL

5.1. There are specific sets of circumstances that could influence public communication in a nuclear or radiological emergency. Section 5 recommends arrangements for public communication under particular circumstances that necessitate additional considerations to those recommended in the previous sections.

5.2. All arrangements for public communication should be based on the principles of public communication as set out in Section 2 (see paras 2.2.4–2.2.38). All arrangements should take into consideration the challenges of public communication (see paras 2.2.42–2.2.74), irrespective of the particular circumstances.

NUCLEAR OR RADIOLOGICAL EMERGENCY INITIATED BY AN ACCIDENT

5.3. If a nuclear or radiological emergency is initiated by an accident such as an operating error or equipment failure, those responsible for public communication in an emergency should expect interest on the part of the public, the news media and other interested parties in the cause of the accident, and in responsibilities and liabilities.

5.4. The provision of such information might be difficult; for legal reasons relating to an investigation of the accident, for example. The principles of public communication (see paras 2.2.4–2.2.41) should be applied in relation to information on the cause of the accident, and on responsibilities and liabilities.

5.5. The objectives of public communication (see para. 2.2.1–2.2.3) should be maintained, especially with regard to gaining and maintaining trust on the part of the public in the emergency response.

NUCLEAR OR RADIOLOGICAL EMERGENCY INITIATED BY A NATURAL EVENT

5.6. Those responsible for public communication in an emergency should anticipate that, if a nuclear or radiological emergency is initiated by a natural event such as a hurricane, an earthquake or a flood, the occurrence of multiple events (i.e. the initial natural event and the

subsequent events giving rise to the emergency) could increase the complexity of the public communication response.

5.7. Special attention should be paid to the coordination of the public communication response within the unified command and control system in an emergency initiated by a natural event (see para. 2.2.32 and para. 4.41). The public communication response should deal with all relevant aspects of the events in accordance with the responsibilities specified for the unified command and control system.

5.8. The public communication strategy and the public communication plan should give guidance on the use of public communication tools in the event of disruption of the infrastructure for communication. The consequences of a natural event might disrupt infrastructure and some means of public communication (e.g. mobile communication services) might be unavailable or might not be usable to the full extent.

5.9. Plans should be developed and pre-established messages should be prepared for broadcasting on television and radio stations as well as for possible dissemination online. Those responsible for public communication in an emergency should anticipate at the preparedness stage, to the extent possible, the impact of a natural event on the public communication response by applying the concept of redundancy as outlined in paras 3.89 and 3.91.

NUCLEAR OR RADIOLOGICAL EMERGENCY INITIATED BY A NUCLEAR SECURITY EVENT

5.10. A nuclear security event is an event that has potential or actual implications for nuclear security that must be addressed [15]. Such events would typically involve criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities or associated activities, or credible threats thereof (e.g. theft of radioactive material or sabotage). A nuclear security event might also initiate a nuclear or radiological emergency, in which case the response will include addressing both safety aspects and security aspects of the emergency.

5.11. Requirement 13 of GSR Part 7 [2] (para. 5.69) requires that “arrangements shall take into account the need to protect sensitive information in circumstances where a nuclear or radiological emergency is initiated by a nuclear security event”.

5.12. In accordance with the IAEA Nuclear Security Fundamentals [15], the legislative and regulatory framework should provide for the establishment of regulations and requirements for protecting the confidentiality of sensitive information. Arrangements for public communication in an emergency initiated by a nuclear security event should be established at the preparedness stage. Guidance on protecting the confidentiality of information is provided in Ref. [16].

5.13. Public information officers should be made familiar at the preparedness stage with the nature of sensitive information and with why such information cannot be issued (for example, information could be sensitive for reasons of nuclear security or for legal reasons).

5.14. Requirements to protect sensitive information may be perceived by the public and other interested parties as compromising the principles of public communication (see paras 2.2.62.2.21–2.2.21).

5.15. The public communication response should explain, without compromising sensitive information, why certain types of information cannot be provided or why its release might be delayed. This should not prevent or delay the provision of any non-sensitive information that is essential to meeting the goals of emergency response, as required in GSR Part 7 [2] (para. 3.2).

TRANSITION PHASE

5.16. Those responsible for public communication should anticipate that the need for public communication will change in the course of an emergency. During an emergency response phase, the primary focus of public communication will be on aspects that will support informed decision making and effective protective actions and other response actions as recommended by the relevant authorities.

5.17. As the situation is brought under control and stabilized, the relevant authorities will shift the emergency response efforts to actions aimed at enabling the termination of the emergency and preparation for the resumption of normal living conditions for affected populations. This includes preparation for the resumption of normal social and economic activity.

5.18. During this transition phase (see paras 3.74–3.75 and Ref. [7], Section 2), various emergency response actions that were taken during the emergency response will be adapted or restrictions that were imposed will be lifted. This will have consequences for affected populations and other interested parties, as well as for their information needs and priorities.

5.19. Requirement 18 of GSR Part 7 [2] (para. 5.97) requires that "The termination of a nuclear or radiological emergency shall be based on a formal decision that is made public and shall include prior consultation with interested parties, as appropriate".

5.20. Requirement 18 of GSR Part 7 [2] (para. 5.96) also requires that "Arrangements for communication with the public in a nuclear or radiological emergency (see Requirement 13) shall include arrangements for communication on the reasons for any adjustment of protective actions and other response actions and other arrangements aimed at enabling the termination of the emergency. This shall include providing the public with information on the need for any continuing protective actions following termination of the emergency and on any necessary modifications to their personal behaviour. Arrangements shall be made, during this period, to closely monitor public opinion and the reaction in the news media in order to ensure that any concerns can be promptly addressed."

5.21. The monitoring of public opinion and of the reaction in news media should be considered at this stage.

5.22. GSR Part 7 [2] requires (para. 5.100) that "The government shall ensure that, as part of its emergency preparedness, arrangements are in place for the termination of a nuclear or radiological emergency. The arrangements shall take into account that the termination of an emergency might be at different times in different geographical areas. The planning process shall include as appropriate:… (g) Arrangements for continued communication with the public, and for monitoring of public opinion and the reaction in the news media…".

5.23. GSG-11 [7] recommends (paras. 3.20(e)) that a mechanism and the means for continued communication with and consultation of the public and other interested parties, including local communities, during the transition phase should be put in place. This is a specific prerequisite that should be met in order to be able to declare the termination of an emergency.

5.24. The expected changes in priorities and in the needs for public information during an emergency response phase and during the transition phase should be considered in making

arrangements for public communication in an emergency. These emergency arrangements should include arrangements for communicating with the public on the decision made by the response organization or other relevant authority to terminate the emergency and to transition to either an existing or a planned exposure situation.

5.25. GSG-11 [7] (see paras 2.14, 3.4(a)) recognizes that the transition to an existing exposure situation or a planned exposure situation and the subsequent termination of the emergency might occur at different times in different geographical areas or sites. Possible concerns and needs for public information with regard to the termination of the emergency should be taken into account in arrangements for public communication. It should be taken into account in the arrangements that the concerns of the public and needs for public information might be different in different geographical areas and sites.

5.26. Direct public communication and consultation about decisions that could affect the daily lives of the populations concerned for an extended period should be conducted in the transition phase. This public communication should aim to help affected populations to cope with the effects of stress and should provide the public with reassurance.

5.27. The affected populations should be assisted by the establishment of public support centres as recommended in GSG-11 [7] (paras 4.101(c), 4.178). Risk perception and its social context (see para. 2.2.42) should be taken into account in public communication.

5.28. GSG-11 [7] (para. 3.18) recommends that "Before the termination of the emergency, the following should be discussed with and communicated to the public and other interested parties, as appropriate:

(a) "The basis and rationale for the termination of the emergency and an overview of the actions taken and the restrictions imposed;

(b) "The need to adjust imposed restrictions, to continue protective actions or to introduce new protective actions, as well as the expected duration of these actions and restrictions;

(c) "Any necessary modifications to people's personal behaviours and habits;

(d) "Options for the implementation of self-help actions[23], as appropriate;

[23] Examples of self-help actions include, but are not limited to, avoiding prolonged visits to certain areas, changing farming practices and land use, and reducing the consumption of certain foods [6].

(e) "The need for continued environmental monitoring and source monitoring after the termination of the emergency;

(f) "The need for continued efforts to restore services and workplaces;

(g) "Radiological health hazards associated with the new exposure situation."

5.29. GSG-11 [7] recommends (para. 4.9) that "In the transition phase, the necessary transfer of responsibilities to different jurisdictions or different authorities (or to different units within an organization) should be carried out in a formal, coordinated and fully transparent manner and should be communicated to all interested parties".

5.30. This transfer of responsibilities in various areas is to allow for long term management of the situation (GSG-11 [7], paras 4.10–4.15). In this context, any transfer of authority and responsibilities for public communication in the transition phase should be considered at the preparedness stage. Any such transfer of responsibilities should be unambiguously addressed in the public communication programme and in the public communication plan.

5.31. Communication with and consultation of interested parties in the transition phase should be increased in comparison with the emergency response phase, as required in GSR Part 7 [2] (para. 5.99) and as recommended in GSG-11 (Ref. [7], paras 4.38, 4.197–4.207). The affected local community should be encouraged to participate actively in the communication and consultation in the transition phase, as enabled by the emergency response organization. This participation will help to maintain trust on the part of the public when emergency response actions are to be adapted and when restrictions that were imposed, for instance food restrictions, are to be lifted.

5.32. Consultation of interested parties should be based on effective mechanisms of communication that are founded on openness, accountability and measures of effectiveness, and should allow for feedback to be accommodated in a timely manner (see GSG-11 [7], para. 4.202).

5.33. Experience has shown that communication with and consultation of interested parties that is late or is at a low level is likely to have long term consequences for relations with and communication with interested parties in the long term recovery phase. The following major points should be addressed in the public communication plan to enable effective public communication in the transition phase:

(a) The public and interested parties should be regularly informed about ongoing actions for protection of the public and protection of the environment.

(b) Programmes of public information on radiation induced health effects, including the concept of risk, should be introduced, in cooperation with educational institutions.

(c) These programmes of public information should be aimed at improving knowledge and understanding of the emergency response actions taken in the transition phase. The programmes should be continued after the termination of the emergency.

(d) Organizations should anticipate that concerns on the part of the public with regard to other aspects of the emergency response, such as waste management and waste disposal, may grow as the efforts made to enable the termination of an emergency progress.

APPENDIX
EXAMPLE SYSTEM FOR PUTTING RADIOLOGICAL HEALTHHAZARDS IN PERSPECTIVE IN A NUCLEAR OR RADIOLOGICAL EMERGENCY

A.1. The following system for putting radiological health hazards in perspective has been derived on the basis of the findings of the UNSCEAR 2012 Report [13] and the generic criteria established in GSR Part 7 [2] and GSG-2 [6] for taking protective actions and other response actions in a nuclear or radiological emergency.

A.2. The example system in para. A.1 should be considered by the relevant authorities in developing a national system for putting radiological hazards in perspective, as required in GSR Part 7 [2] (paras 5.72, 5.83, 5.96, II.16), the national context being taken into account.

'Dangerous to health'

A.3. There is a possibility to develop in an individual a serious injury and/or physical harm that is life threatening or that could reduce the quality of life as being due to radiation exposure.

A.4. The 'dangerous to health' level corresponds to doses (i.e. doses exceeding the generic criteria in Table II.1 of Appendix II of GSR Part 7 [2]) at which health effects in an individual could be scientifically and objectively attributed to radiation exposure.

A.5. If such doses are projected, protective actions and other response actions should be taken under any circumstances to protect individuals.

A.6. If such doses are received, medical examination and screening should be provided followed, as required, by medical treatment.

'Possible health effects resulting from radiation exposure'

A.7. There is a small possibility that epidemiological studies would reveal an increase due to radiation exposure in the frequency of occurrence of specific cancers in a large population. However, attributing any individual case of cancer as being due to radiation exposure will not be possible.

A.8. The 'possible health effects resulting from radiation exposure' level corresponds to doses (i.e. doses exceeding the generic criteria in Table II.2 of Appendix II of GSR Part 7 [2]) at which an increase in the frequency of occurrence of specific cancers in a population could be scientifically and objectively attributed to radiation exposure by means of epidemiological analysis.

A.9. If such doses are projected, protective actions and other response actions should be taken as a precaution to protect individuals.

A.10. If such doses are received, longer term medical follow-up should be provided to detect early and to treat effectively specific radiation induced health effects.

A.11. Care should be taken in public communication on projections of numbers of health effects among a population in such cases. The meaning of the numbers should be clearly explained and should be clearly related to the objective of the longer term medical follow up.

'No observable health effects resulting from radiation exposure'

A.12. At present, there is no possibility that epidemiological studies would reveal an increase due to radiation exposure in the frequency of occurrence of specific cancers in a large population. Attributing any individual case of cancer as being due to radiation exposure will also not be possible.

A.13. The 'no observable health effects resulting from radiation exposure' level corresponds to doses of the order of magnitude of doses due to global average background levels of radiation and below the generic criteria provided in Table II.1 and Table II.2 of Appendix II of GSR Part 7 [2].

A.14. If such doses are projected, protective actions and other response actions for protecting individuals against radiological health hazards are not warranted. Taking such actions may be considered, as a precaution, to reduce doses to be as low as reasonably achievable, but only if the actions are justified and optimized (see para. 3.195).

A.15. If such doses are received, no medical attention in relation to radiation induced health effects is warranted.

A.16. Projections of numbers of health effects among a population in such cases, made for whatever reason, should not be used in public communication on radiological health hazards.

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ANNEX I
EXAMPLE TEMPLATES OF A PRELIMINARY STATEMENT AND AN INITIAL PRESS RELEASE

PRELIMINARY STATEMENT

I-1. Example of a preliminary statement for use if there are media reports and/or rumours about a situation with no confirmed information available:

> *"[Organization] is aware of [media reports; rumours; etc.] with regard to [a situation; an emergency/incident etc.] at [location]. At present [organization] is looking into this matter and will provide more information as it becomes available"*

INITIAL PRESS RELEASE

I-2. Example of an initial press release for use if the organization has been informed about an emergency, incident or event but has not received any details:

> *"[Organization] has been informed that [a situation; an emergency/incident etc.] has occurred at [location]. [Organization] has [activated] [resources] and remains in close contact with [operator, point of contact at location, etc.]. [Organization] will provide more information as it becomes available."*

ANNEX II
EXAMPLE OF A PUBLIC INFORMATION OFFICER SECTION WITHIN A UNIFIED COMMAND AND CONTROL SYSTEM

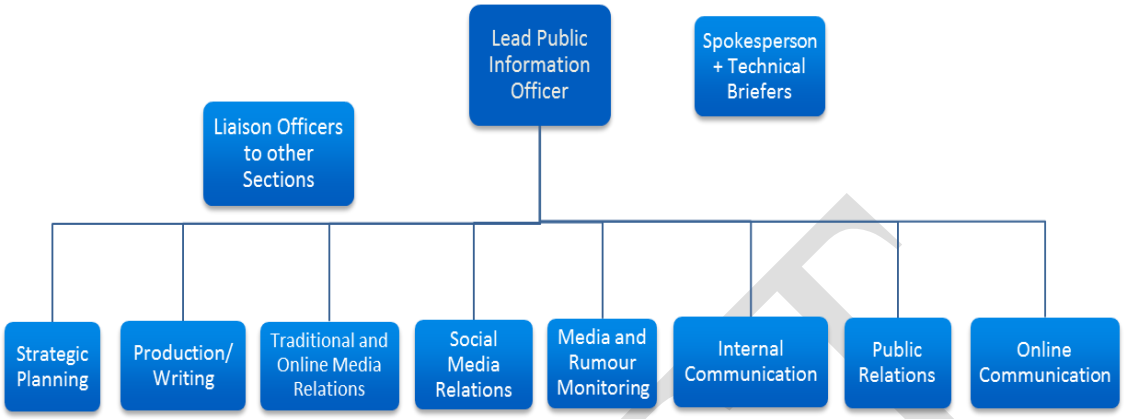

FIG. I-1. Example of an organizational plan for a public information officer section within a unified command and control system.

II-1. Figure I-1 shows an example of a scalable organizational plan for a public information officer section within a unified command and control system for use in public communication in a nuclear or radiological emergency.

ANNEX III
LISTING OF ADVANTAGES AND DISADVANTAGES OF VARIOUS COMMUNICATION TOOLS

III.-1. Table III-1 provides a listing of advantages and disadvantages of various communication tools for use in public communication in a nuclear or radiological emergency.

TABLE III-1. LISTING OF ADVANTAGES (PROS) AND DISADVANTAGES (CONS) OF VARIOUS COMMUNICATION TOOLS

Channel of communication	Examples	Pros	Cons
One way	Press release Web site or 'dark' site update Newsletter for interested parties Intranet update Question and answer lists on web sites Text messages and mobile messaging apps Warning apps Announcements on television and radio stations Printed information products Digitally distributed information products, e.g. photographs, graphics, infographics, podcasts Warning sirens and loudspeakers Live streaming Spokesperson interview e.g. in the press or on television or radio stations An internal meeting	Scalable May reach a large group at the same time Credible provider of information Gives the possibility to answer questions and clarify subjects A way to address difficult issues	Limited or no opportunity to clarify on request and to have a dialogue Might be time sensitive Requires trained spokespersons with good communication skills
Two way	Online chats Press conference Briefings for news media Public meetings Public information centre Answering service to enquiries by telephone, by email and on social media platforms Technical visits	Credible provider of information Establishing a dialogue with interested parties Gives a possibility to make communication more human A way to address difficult issues Possibility to check what information is getting through and how it is being interpreted May assist in the gathering of real-time information from eye witnesses for raising awareness of the situation and identifying hazards and problems in the field	Social media platforms need to be adapted before an emergency occurs; Might need many staff, e.g. for answering services Good communication and interaction skills needed

Email, web sites	Internal emails to staff and stakeholders 'Microblogs': platforms where people share short posts (e.g. Twitter, Weibo) Content communities: Platforms that work around specific content type that people create and comment on. Forums: Online discussion platforms Wikis: Web pages where people create and edit content together Blogs: Online logs or journals Social networks Individual web sites as platforms in which people share content and communicate	Information sharing between communication staff, technical staff and other staff Creating a dialogue with interested parties Gives a possibility to make communication more human Gives an opportunity to connect people with questions to people with answers Gives a possibility to check what information is getting through and how it is being interpreted	If no official email communication is in place, important emails can be lost Social media platforms need to be adapted before an emergency occurs The platform determines the pace of communication Might need many staff, e.g. for answering questions

ANNEX IV
EXAMPLE LIST OF USEFUL BACKGROUND INFORMATION MATERIAL

IV-1. BASICS OF RADIOACTIVITY

Types of radiation;

Radiation dose, does rate and units (and common multiples);

Putting radiation doses in perspective (radiation dosage chart);

Natural background radiation;

Monitoring radiation (sampling, hot spots, types of detection: networks, airborne, mobile, Safecast);

Explanations of most common isotopes: Am-241, Ir-192, Cf-252, Pu-238, Cs-137, Po-210, Co-60, Ra-226, Sr-90, Se-75, I-131.

IV-2. APPLICATIONS AND USES OF IONIZING RADIATION, NUCLEAR MATERIAL AND OTHER RADIOACTIVE MATERIAL

Nuclear power uses;

Industrial uses;

Medical uses;

Irradiation facilities and activities;

Research reactors;

Accelerators.

IV-3. NUCLEAR POWER PLANTS

"How does a nuclear reactor work?"

"How does fission work?"

Reactor types/designs;

- Pressurized water reactor;
- Boiling water reactor;
- Pressurized heavy water reactor;

Light water graphite reactor;

Fast breeder reactor;

Gas cooled reactor;

Nuclear marine propulsion reactors;

Information on key safety systems (cooling);

Concepts of redundancy and diversity (defence in depth);

Different accident scenarios and fundamentals of accident progression;

Beyond design basis accidents;

Hydrogen ignition events;

Meltdown;

Loss of coolant accident;

Is nuclear power safe and is it safe to live near a nuclear power plant?

IV-4. NUCLEAR FUEL CYCLE

Uranium milling and conversion (chemical hazards);

Fuel enrichment;

Fuel fabrication;

Spent fuel;

Storage of fuel;

Dry storage of fuel;

Different types of wet storage of fuel;

Reprocessing;

Transport.

IV-5. APPROACHES FOR WASTE MANAGEMENT AND DECOMMISSIONING

IV-6. PAST RADIOLOGICAL ACCIDENTS

Chernobyl [IV-1–IV-4);

Three Mile Island [IV-5];

Fukushima Daiichi [IV-6];

Windscale;

Goiânia [IV-7];

Tokaimura [IV-8].

IV-7. NUCLEAR SECURITY

National laws and requirements;

Definition of a nuclear security event;

International guidance.

IV-8. EMERGENCY MANAGEMENT

Roles and qualifications of first responders and decision makers;

Emergency classification;

International standards and national law;

Where to find information;

Why emergency exercises are held.

IV-9. PROTECTION AGAINST RADIATION

How to act during an emergency;

Time, distance, shielding;

Exposure pathways;

National radiation protection system and mitigation steps;

How to recognize a radiation source;

Radiation induced health effects;

Iodine thyroid blocking;

How to protect food and livestock;

Taking actions beyond what is warranted.

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ANNEX V
ATTRIBUTION OF HEALTH EFFECTS TO RADIATION EXPOSURE AND PROSPECTIVE INFERENCE OF RISKS

V-1. The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) reports to the General Assembly of the United Nations (UN) on the sources, effects and risks of ionizing radiation.

V-2. "In its resolution 62/100 of 17 December 2007, the General Assembly, in recalling the intention of the Committee "to clarify further the assessment of potential harm owing to chronic low-level exposures among large populations and also the attributability of health effects",[24] encouraged the Committee "to submit a report on that issue at its earliest convenience"." (Ref. [V-1], Chapter III, p.9, para. 22.).

V.-3. In this context, attribution refers to the ascribing of an outcome — in particular a health effect — to radiation exposure: an outcome may be an individual outcome (such as the occurrence of a health effect in an individual) or a collective outcome (such as a change in the frequency of occurrence of health effects in a population or a group).

V-4. Demonstrating the relevance of this issue for UN member states, "the Assembly, in its resolution 66/70, called upon the [UNSCEAR] Committee to submit to it at its sixty-seventh session the report requested by the Assembly on the attributability of health effects from radiation exposure."(Ref. [V-1], Chapter III, p.9, para. 24.)

V-5. The Committee finalized its Report [V-1] at its Fifty-ninth session from 21 to 25 May 2012, and submitted it to the sixty-seventh session of the General Assembly (Document A/67/46), which welcomed the report. Its findings are summarized as follows:

(a) In case of high doses and high dose rates, deterministic effects[25] in an individual could be unequivocally attributed to radiation exposure if possible alternative causes could be eliminated (Ref. [V-1], Chapter III, p.9, para. 25(a) [13]);

(b) Stochastic effects[26] in an individual cannot be unequivocally attributed to radiation exposure, because radiation exposure is not the only possible cause and there are at

[24] Official Records of the General Assembly, Sixty-first Session, Supplement No. 46 and corrigendum (A/61/46 and Corr.1), para. 5.
[25] A deterministic [health] effect [of radiation] is a 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 [8].
[26] A stochastic [health] effect [of radiation] is a 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 [8].

present no generally available biomarkers that are specific to radiation exposure (Ref. [V-1], Chapter III, p.9, para. 25(b));

(c) An increased incidence of stochastic effects in a population could be attributed to radiation exposure through epidemiological analysis — provided that the increased incidence were sufficient to overcome inherent statistical uncertainties (Ref. [V-1], Chapter III, p.10, para. 25(c));

(d) An increase in the incidence of hereditary effects in human populations cannot at present be attributed to radiation exposure (although demonstrated in animal studies) (Ref. [V-1], Chapter III, p.10, para. 25(d));

(e) Increases in incidence of health effects in populations cannot be attributed reliably to chronic exposure to radiation at levels that are typical of the global average background levels of radiation. This is because of the uncertainties associated with the assessment of risks at low doses, the current absence of radiation specific biomarkers for radiation induced health effects and the insufficient statistical power of epidemiological studies (Ref. [V-1], Chapter III, p.10, para. 25(f)).

V-6. In line with para. V-5(d) and (e), the UNSCEAR Report [VI-1] clearly indicates that increases in the incidence of health effects in populations cannot be attributed reliably to chronic exposure to radiation at levels that are typical of the global average background levels of radiation; and that an increase in the incidence of hereditary effects in human populations cannot at present be attributed to radiation exposure.

V-7. These outcomes are crucial in communications relating to radiation induced health effects: decision-makers and the public need to be informed that relatively low level radiation exposure would not cause health effects that can be attributed to radiation.

V-8. UNSCEAR "does not recommend multiplying very low doses by large numbers of individuals to estimate numbers of radiation-induced health effects within a population exposed to incremental doses at levels equivalent to or lower than natural background levels" (Ref. [V-1], Chapter III, p.10, para. 25(f)).

V-9. UNSCEAR "notes that public health bodies need to allocate resources appropriately, and that this may involve making projections of numbers of health effects for comparative purposes. This method, though based upon reasonable but untestable assumptions, could be useful for such purposes provided that it were applied consistently, the uncertainties in the

assessments were taken fully into account, and it were not inferred that the projected health effects were other than notional" (Ref. [V-1], Chapter III, p.10, para. 25(g)).

V-10. Hence, the results from such theoretical calculations are to be used for the purpose of justifying and optimizing the protection and safety. However, . it is incorrect and unwarranted to make inferences of expectations of numbers of health effects in an affected population from such theoretical calculations.

V-11. These considerations are important for public communication relating to possible health effects resulting from exposure to radiation. Technical experts, those responsible for public communication and decision makers need to be aware that such theoretical calculations of numbers of health effects should not be used in public communication.

V-12. Use of such theoretical calculations of potential numbers of health effects in public communication during or following past emergencies resulted in inappropriate projections being made of potential numbers of deaths among large numbers of people exposed to radiation at relatively low levels.

V-13. This gave rise to widespread anxiety and other harmful non-radiological consequences and the impression that the impact of the emergency was far more severe than what the actual impact was.

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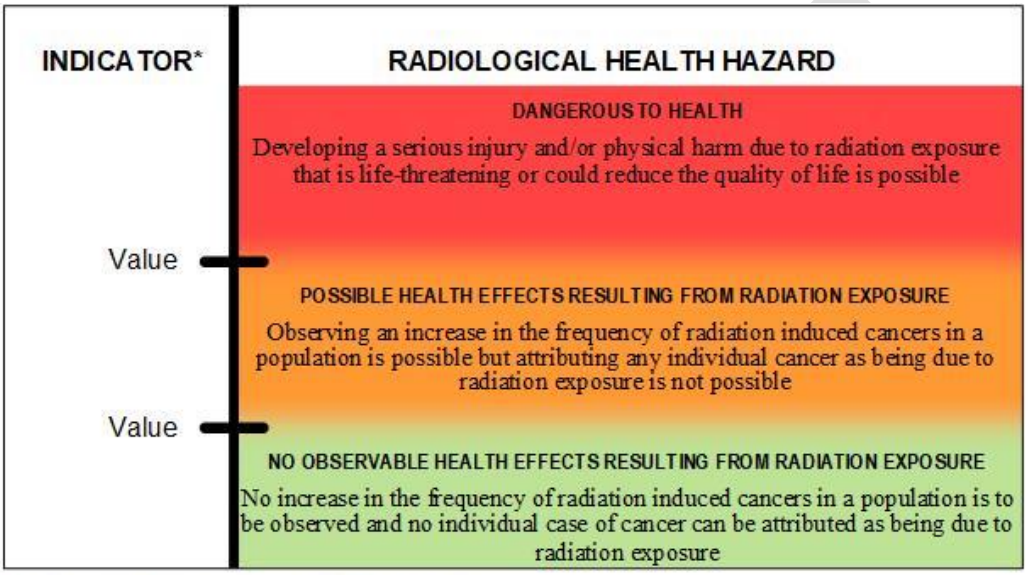
ANNEX VI
EXAMPLE GRAPHIC FOR THE SYSTEM FOR PUTTING RADIOLOGICAL HEALTH HAZARDS IN PERSPECTIVE

VI-1. Table VI-1 shows an example graphic for the system for putting radiological hazards in perspective for use in public communication in a nuclear or radiological emergency.

TABLE VI-1. EXAMPLE GRAPHIC FOR THE SYSTEM FOR PUTTING RADIOLOGICAL HEALT HAZARDS IN PERSPECTIVE



* E.g. dose, dose rate or any another indicator.

CONTRIBUTORS TO DRAFTING AND REVIEW

Aoyama, Y.	Nuclear Regulation Authority, Japan
Berthelot, L.	International Atomic Energy Agency
Buglova, E.	International Atomic Energy Agency
Burnell, S.	Nuclear Regulatory Commission, United States of America
Dahlstrom, D.	International Atomic Energy Agency
Dercon, G.	Food and Agriculture Organization of the United Nations/International Atomic Energy Agency
Ford, J.	Consultant, Canada
Grimston, M.	United Kingdom
Harrington, H.	Nuclear Regulatory Commission, United States of America
Harvey, S.	International Atomic Energy Agency
Hubbard, L.	Consultant, Sweden
Hussain, M. N.	Pakistan Nuclear Regulatory Authority, Pakistan
Levin, N.	Australian Nuclear Science and Technology Organisation, Australia
McClelland, V.	Consultant, United States of America
McIntyre, D.	Nuclear Regulatory Commission, United States of America
Meschenmoser, P.	International Atomic Energy Agency
Nestoroska Madjunarova, S.	International Atomic Energy Agency
Nishizawa, M.	Consultant, Japan
Pandza, J.	King's College, London, United Kingdom
Perko, T.	Belgian Nuclear Research Centre, Belgium
Raitio, K.	Radiation and Nuclear Safety Authority, Finland
Rogers, B.	King's College, London, United Kingdom
Sommerholt, C.	Vattenfall, Sweden
Vilar Welter, P.	International Atomic Energy Agency
Wieland, P.	World Nuclear University, United Kingdom