Ireland's National Report Required Under Article 9.1 of Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations, as amended by the Council Directive 2014/87/Euratom of 8 July 2014

Contents

Introduction

Ireland does not have any nuclear installations as defined under Article 3(1) of Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations, as amended by the Council Directive 2014/87/Euratom of 8 July 2014 (hereafter called “the Directive”).

Ireland does not have plans to develop on its territory any civilian nuclear installations, as defined in Article 3 of the Directive, as a matter of Government policy and of national law under the provisions of the Electricity Regulations Act 1999 (No. 23 of 1999). It should also be noted that there is no Irish political party who has a policy which advocates for a nuclear installation to be developed on Irish territory.

This is the second national report required under Article 9 of the Directive. This report outlines the legislative, regulatory and organisational framework governing nuclear safety and radiation protection at the national, regulatory and authorisation holder level in Ireland. It is important to note that, as a non-nuclear country, Ireland’s national regulatory framework provides primarily for radiation protection and safety in the context of the use of ionising radiation in medicine, education and industry.

The report describes the organisation and functions of the competent regulatory authority, the Environmental Protection Agency (the EPA). This includes an explanation of how it is functionally independent from any external bodies.

The authorisation holder’s duties and responsibilities are outlined along with requirements regarding the competence of their staff and radiation protection officers.

The report includes details of requirements on the competent authority to provide information to the public on any matters relating to radiological safety which the EPA deems fit.

The format of this Report follows the structure outlined in the ENSREG Reporting Guidelines for the EU Nuclear Safety Directive.

Reporting Article by Article

Article 4: Legislative, regulatory and organisational framework

Article 4 (1) *Member States shall establish and maintain a national legislative, regulatory and organisational framework ("national framework") for the nuclear safety of nuclear installations.*

The legislative framework governing nuclear safety and radiation protection in Ireland is the Radiological Protection Act 1991 (No. 9 of 1991), as amended and the Radiological Protection Act 1991 (Ionising Radiation) Regulations 2019 (No. 30 of 2019), referred to as IRR19. Following the merger of the Radiological Protection Institute of Ireland (RPII) and the EPA in August 2014, the functions and responsibilities of the RPII were transferred to the EPA by the Radiological Protection (Miscellaneous Provisions) Act 2014 (No. 20 of 2014). Other main legislation relevant to nuclear and radiological matters is as follows:

- European Communities (on the supervision and control of certain shipments of radioactive waste and spent fuel) Order (SI No. 86 of 2009);
- Commission Regulation (Euratom) No 302/2005 of 8 February 2005 on the application of Euratom safeguards which equally apply in Ireland
- European Communities (Nuclear Safety) Regulations 2017
- European Union (Basic Safety Standards Arising from Medical Exposure to Ionising Radiation) Regulations 2018 (SI No. 256 of 2018)
- Radiological Protection Act 1991 (Authorisation Application and Fees) Regulations 2019 (SI No 34 of 2019).

Ireland has published a 'National Policy Position for Nuclear Safety and Radiation Protection' that has been developed in line with current scientific evidence, Ireland's commitments due to its membership of the EU and other international organisations such as the International Atomic Energy Agency (IAEA), the specific radiation protection and nuclear safety issues of concern in Ireland and a commitment to the safety of people in Ireland.

In March 2000, Ireland became the 25th State to ratify the Joint Convention on the Safety of Radioactive Waste and the Safety of Spent Fuel Management, thus triggering the entry into force of the Convention.

Ireland ratified the Convention on the Physical Protection of Nuclear Materials (CPPNM) in 1991 and is subject to the terms of this Convention. The Radiological Protection (Miscellaneous Provisions) Act 2014 (No. 20 of 2014) gives effect to the Amendment to the CPPNM done at Vienna on 8 July 2005. Ireland deposited an instrument of ratification of the Amendment with the Director General of the IAEA on 22 September 2014.

Also relevant is the Freedom of Information Act, 1997 which contains an amendment to Section 36 of the Radiological Protection Act 1991. The amendment deals with confidentiality.

Article 4 (1) a
The national framework shall provide in particular for:
the allocation of responsibilities and coordination between relevant state bodies;

The EPA is a State sponsored body established under the Environmental Protection Agency Act, 1992.

The EPA carries out the following duties in relation to radiological protection/nuclear safety:

- provision of advice to the Government, the Minister for Climate Action Communication Networks and Transport and other Ministers on matters relating to radiological safety;
- provision of information to the public on any matter relating to radiological safety which the Agency deems fit;
- maintenance and development of a national laboratory for the measurement of levels of radioactivity in the environment, and assessment of the significance of these levels for the Irish population;

- provision of an instrument calibration service for those who work with ionising radiation;
- authorisation and regulation of approved radiological practices;
- assisting relevant stakeholders in preparedness and response to nuclear accidents and acting in support of national plans for emergencies arising from radiological and nuclear accidents;
- organising tests of the national plans;
- provision of a radioactivity measurement and certification service;
- preparation of codes of practice and guidance for the safe use of ionising radiation;
- carrying out or promoting research in relevant fields;
- monitoring developments abroad relating to nuclear installations and radiological safety generally, and keeping the Government informed of their implications for Ireland;
- co-operating with the relevant authorities in other States and with appropriate international organisations;
- representing the State on international bodies;
- acting as the competent authority for Ireland under International Conventions on nuclear matters.

The EPA is also the national competent authority for the purposes of the IAEA

Article 4 (1) b
The national framework shall establish responsibilities for:
national nuclear safety requirements, covering all stages of the lifecycle of nuclear installations;

Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, the Convention on Early Notification of a Nuclear Accident and the Convention on the Physical Protection of Nuclear Material.

National safety requirements and regulations are set out in IRR19, which implements the Council Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation. The is responsible for implementation of a system of regulatory control covering these requirements and regulations.

The system of regulatory control comprises: authorisation (licensing and registration), compliance assurance (including inspections), guidance and enforcement. The EPA has produced guidance documents and codes of practice for undertakings which are available on its website (http://www.epa.ie/radiation/regulation/guidance/)

Article 4 (1) c *The national framework shall establish responsibilities for:* *a system of licensing and prohibition of operation of nuclear installations without a*

As noted above, Ireland does not have any nuclear installations as defined under Article 3(1) of the Directive and the development of such installations is prohibited by law. SI 332 of 2017 provides that the EPA where appropriate "establish and maintain a national regulatory and organisational framework for the nuclear safety of nuclear installations". This would include the following:

a) the allocation of responsibilities and coordination between relevant state bodies;
b) national nuclear safety requirements, covering all stages of the lifecycle of nuclear installations;
c) a system of licencing and prohibition of operation of nuclear installations without a licence;
d) a system of regulatory control of nuclear safety performed by the competent regulatory authority;
e) effective and proportionate enforcement actions, including, where appropriate, corrective action or suspension of operation and modification or revocation of a licence;
f) ensuring that an appropriate inspection regime forms part of the regulatory oversight of nuclear installations.

IRR19 established a graded approach to authorisation for the use of ionising radiation in medicine, education and industry. This approach comprises of both registration and licensing. This new graded system replaces the older licence based system established under earlier Regulations. In order to legally carry out any practice involving the use of radioactive sources or

ionising radiation producing equipment such as X-ray apparatus, it is necessary to obtain an authorisation in advance from the EPA, unless the practice has been specifically exempted. The form of authorisation (registration and licensing), which applies in a given situation, will depend on the magnitude and likelihood of any exposures resulting from the practices and the impact that regulatory control may have in improving radiological safety. The EPA has published a list of Practices subject to Registration and a list of Practices subject to Licensing on its website (https://www.epa.ie/radiation/regulation/authorisation/)

EPA inspections are designed to assess compliance with national Regulations and any conditions attached to a registration or licence. The inspection programme also aims to assess the standard of radiation protection in place at each licensed facility and to encourage licensees to strive to attain best practice in relation to radiation protection.

Inspection planning is risk based with higher risk practices subject to more frequent inspections. In assessing the level of risk account is taken of:

- The number of practices licensed and the level of complexity of the practice(s);
- The type, size, number and complexity of the radioactive source or irradiating apparatus;
- The security and safety measures required;
- The complexity of radiation protection measures required;
- The potential for doses arising to workers or members of the public;
- Consequences of an accident.

Failure to comply with either a regulatory requirement (IRR 19) or a condition attached to an authorisation is an offence which could lead to prosecution. In addition, conducting a practice without an authorisation is an offence that can lead to a prosecution.

The EPA has ten whole time equivalent inspectors and support staff working in the radiological protection area. In addition, external expert consultants are brought in as needed to assist in specialist inspections. Radiological protection inspections are carried out under the ISO 17020 Quality Management System and in all cases the responsibility for determination of conformity of the facility being inspected will remain with the EPA inspector.

Inspectors are engaged in all regulatory activities in addition to inspection, including authorisation, drafting guidance documentation, accreditation activities, provision of advice to Government, radioactive waste management, management of Radiation Protection Advisor (RPA) registers, approval of courses, international representation, regulator/stakeholder liaison, policy and technical advice for legislation development.

The EPA manages its radiological protection authorisation and inspection activities through a secure web portal. Applicants can apply for a registration certificate or licence online, renew or make amendments to an existing licence online. The system also provides for the management of all aspects associated with EPA inspection activities and inspections can be planned and announced through the web portal and licensees are able to respond to inspection findings online.

1. *Article 4 (1) d*
2. *The national framework shall establish responsibilities for:*
3. *a system of regulatory control of nuclear safety performed by the competent regulatory*

As noted above, Ireland does not have any nuclear installations as defined under Article 3(1) of the Directive. SI 332 of 2017 gives powers to the EPA to, if needed, “establish and maintain a national regulatory and organisational framework for the nuclear safety of nuclear installations”.

The production of electricity for supply to the national grid, by nuclear fission, is currently prohibited in Ireland under the Electricity Regulation Act, 1999 (Section 18).

As a non-nuclear country, Ireland's national regulatory framework provides primarily for radiation protection and safety in the context of the use of ionising radiation in medicine, education and industry. The EPA and its inspectors are provided with significant enforcement powers under the Radiological Protection Act 1991 including powers of entry and seizure. Prosecutions can and have been taken against individuals and companies involved in unauthorised activities and against non-compliant undertakings. Fines have been imposed by the courts on individuals and companies which have been prosecuted. In addition, the EPA has the power to issue directions and enforcement notices.

Inspections may be unannounced or announced in advance. Since 2016, the number of unannounced radiological protection inspections has increased from over 30% to 80% of the programme. The number can vary from year to year depending on the focus of the inspection and the disciplines being covered.
Inspections can also arise outside of the normal annual programme where incidents are investigated.

The EPA is committed to ensuring the highest standards in all activities it undertakes. All radiological protection inspection activities are carried out within the framework of an ISO 17020 quality management system. This ensures that inspections are carried out to best international standards and ensures consistency between both inspections and inspectors. In particular, the system provides for inspection planning, training of new and experienced inspectors, the conduct of inspections as well as post inspection follow up and review.

The EPA publishes a report periodically on its website which provides information on its radiological protection inspection activities. The report explains how the annual inspection priorities and programme are developed

and includes a review of the inspection programme findings together with details of the programme.

5. *Article 4 (1) e*
6. *The national framework shall establish responsibilities for:*
7. *effective and proportionate enforcement actions, including, where appropriate, corrective*

The EPA and its warranted inspectors have various enforcement powers under the Radiological Protection Act 1991 and the Carriage of Dangerous Goods by Road Act.

In accordance with the Radiological Protection Act, where an inspector is of the opinion that there is or may be a danger to any individual, land, building or other property arising from a radioactive substance, nuclear device or irradiating apparatus or arising from levels of activity or ionising radiation in excess of the specified levels the inspector shall have the power by direction, to order persons to perform or refrain from performing any act if, in his/her opinion, the performance of such act (as the case may be) is necessary in order to prevent or alleviate the escalation of the danger.

There is a range of enforcement instruments available to the EPA's radiological protection inspectors from 'soft' actions to 'hard' actions including:

- Raising non-compliances during routine inspections and follow up until there is satisfactory closure
- Issuing a warning letter
- Issuing a direction
- Issuing an enforcement notice
- Seizure of relevant items such as radioactive sources/orphan sources
- Placing a restriction on an authorisation
- Revocation of an authorisation
- Prosecution (and subsequent penalties/fines)

Regarding implementation of corrective actions identified during an inspection, the written inspection report is issued to the undertaking within four weeks of the date of the inspection, who must provide a written response

to the report within four weeks. If this is not provided, then the inspectors follow up accordingly.

Article 4 (2)
Member States shall ensure that the national framework is maintained and improved when appropriate, taking into account operating experience, insights gained from safety analyses for operating nuclear installations, development of technology and results of safety research, when available and relevant.

Ireland has no nuclear installations and the development of such installations is prohibited by law and therefore has nothing to report under this Article.

Article 5: Competent regulatory authority

Article 5 (1)
Member States shall establish and maintain a competent regulatory authority in the field of nuclear safety of nuclear installations.

See Article 4 (1) a.

Article 5 (2) a
Member States shall ensure the effective independence from undue influence of the competent regulatory authority in its regulatory decision-making. For this purpose, Member States shall ensure that the national framework requires that the competent regulatory authority:
(a) is functionally separate from any other body or organisation concerned with the promotion or utilisation of nuclear energy, and does not seek or take instructions from any such body or organisation when carrying out its regulatory tasks;

Although there is no nuclear industry in the country, Ireland has provided comment/details on the independence of the regulatory body, as the designated competent authority for nuclear safety in Ireland.

The Environmental Protection Agency is an independent public body established in July 1993 under the Environmental Protection Agency Act, 1992 reporting to the Department of Climate Action, Communication Networks, and Transport. The responsibilities of the EPA were extended in August 2014 following its merger with the Radiological Protection Institute of Ireland (RPII) under the Radiological Protection (Miscellaneous Provisions)

Act 2014. Appropriate coordination between the Department and the EPA is underpinned through a Performance Delivery Agreement which is reviewed and updated annually.

There are also other lines of communication with Governmental authorities including appearing before the Public Accounts Committee or the Joint Parliamentary Committee on the Environment where the EPA has to account for, and respond to questions on, its programmes of work. These proceedings are broadcast for public viewing. For specific programmes, staff of the EPA participate on Inter-Departmental working groups and taskforces that are chaired by Government Ministers or Senior Officials e.g. the Government Task Force on Emergency Planning.

Article 5 (2) b

takes regulatory decisions founded on robust and transparent nuclear safety-related requirements;

Although there is no nuclear industry in the country, Ireland has provided comment/details on the regulatory decisions made by the EPA, as the designated competent authority for nuclear safety in Ireland.

All decisions on applications for radiological authorisations are taken in accordance with the delegation of authorities approved annually by the EPA Board. There is no requirement to consult with any external bodies on radiological authorisations.,.Where applications are received for new technologies or a previously unauthorised practice, which is new or novel, the EPA may set up an authorisation review panel comprising of staff from the Radiation Protection Regulation Unit within EPA, to review the application and make a recommendation on whether an authorisation can be issued. This ensures that authorisation decisions are not made on the basis of just one individual's review of the application.

For radiological protection inspection activities, demonstration of independence is required to achieve and maintain accreditation as a Type A

inspection body to ISO 17020:2012. As part of this standard, the EPA must be independent of those organisations being inspected and inspection related activities may not be influenced by any stakeholder. External expert consultants are on occasion brought in to assist in specialist inspections. However, since inspections are carried out under the ISO 17020 Quality Management System, consultants must comply with the requirements of the standard in terms of training, independence and impartiality. In all cases the responsibility for determination of conformity of the facility being inspected remains with the EPA inspector.

The EPA has developed enforcement procedures, which sets out the procedures for determining which enforcement actions are followed in various situations where serious non-compliances are identified during the course of inspections or other regulatory activities. By adhering to the procedures set out in this policy, the EPA ensures that all enforcement decisions taken by staff are objective in nature. While staff will make a recommendation as to whether a particular enforcement action is taken, the final decision is a matter reserved for the EPA Board.

The publication of an Annual Report and Accounts is the primary means by which the EPA reports on its activities. The EPA Act requires that the EPA present to the Minister a report on its activities during the year and that copies of the report will be laid before the Houses of the Oireachtas (the Irish legislature) as soon as possible after the end of the financial year, but not later than six months thereafter.

The EPA develops an annual communications plan which is informed by the priorities set out in the current Strategic Plan.

The EPA's website provides details of the radiation protection work performed by the EPA, including publications and data (monitoring reports, assessments, online gamma dose rate measurements, etc.). Information is also provided to the public via EPA's social media channels (Twitter and Instagram).

Article 5 (2) c

is given dedicated and appropriate budget allocations to allow for the delivery of its regulatory tasks as defined in the national framework and is responsible for the implementation of the allocated budget;

The EPA is an independent public body that reports to Government and is partially funded by the Exchequer. Radiation protection regulation in EPA is under the overall responsibility of the Director with responsibility for the Office for Environmental Enforcement who reports to the Director General and is a member of the Board of the EPA.

The EPA's income is made up of grants from the Exchequer and other income which includes licensing and enforcement fees and charges for radiological services.

The on-going financial, human resource, and research and development requirements of the EPA are ensured through the normal annual budgeting and workforce planning processes exercised between the Department of Climate Action, Communication Networks, and Transport and agencies under its aegis.

Article 5 (2) d

employs an appropriate number of staff with qualifications, experience and expertise necessary to fulfil its obligations. It may use external scientific and technical resources and expertise in support of its regulatory functions; regulatory tasks;

The EPA implements a performance management and development system (PMDS) for all staff which includes a review of training and staff development needs, at least annually. Training is organised either on an individual basis or in groups depending on the nature of and demand for the training. Training contracts are awarded to trainers who have a good reputation and experience in their field. Where Ireland does not have a large experience base in a given topic (e.g. reactor technology) training is often obtained abroad. Feedback is sought by the EPA's Human Resources department on the quality of training

provided by third party trainers. This feedback is sought both from staff attending the courses and from HR personnel in other organisations.

The role of the EPA in emergency response includes the provision of technical advice and monitoring whereas emergency response coordination/incident management for incidents with offsite consequences is provided by the Lead Government Department/Principal Response Agency. Hence, training for EPA staff is on these technical roles. Staff are assigned an emergency role based on their skills and experience. Assignments are decided by the manager responsible for emergency preparedness and approved by the Programme Manager for Emergency Preparedness. The training needs for different roles are set down in the EPA nuclear and radiological response plan and 3-year staff training programmes are developed based on this. These programmes include a range of delivery methods including participation in drills and exercises, on-the-job training by colleagues, attendance at internationally-organised training courses, participation on relevant international committees and meetings on public communication, emergency planning/response and emergency monitoring, and organisation of internal/national training delivered by the EPA, national and international experts.

The EPA (and formerly the RPII) collaborates with the IAEA, across a range of areas of mutual interest including radiation safety, radon, environmental radioactivity and emergency preparedness and response. This has been achieved through the provision of experts for IRRS and EPREV review missions and technical support missions, for consultancy meetings to prepare new international standards and lecturers and officers for meetings run by the IAEA. These activities have been undertaken by a number of EPA staff and the experience has proven extremely beneficial in terms of staff development and competence building.

Article 5 (2) e
establishes procedures for the prevention and resolution of any conflicts of interest;

The EPA has a number of measures in place to minimise possible occurrences of conflicts of interest. These include the following:

- All staff are required to adhere to the EPA's Code of Conduct for Directors and Staff of the EPA which explicitly deals with potential conflicts of interest;
- Sections 37 and 38 of the EPA Act, 1992 explicitly requires Directors and Staff of the EPA to declare and disclose any interests that could be likely to influence them in relation to any matter coming before the Agency or in the exercise of any function of the Agency and;

In addition, as part of the ISO 17020 Quality System for radiological protection inspections:

- Inspectors are required to adhere to a "Code of Conduct for inspectors"
- A "Risks to Radiation Protection Regulation Impartiality" register is maintained which is used to manage risk in areas where there may be potential conflicts of interest.

Article 5 (2) f
provides nuclear safety-related information without clearance from any other body or organisation, provided that this does not jeopardise other overriding interests, such as security, recognised in relevant legislation or international instruments.

Ireland has no nuclear installations and the development of such installations is prohibited by law.. General nuclear safety information particularly in relation to consequences of a nuclear accident outside of Ireland is made publicly available by EPA.

Article 5 (3)

Member States shall ensure that the competent regulatory authority is given the legal powers necessary to fulfil its obligations in connection with the national framework described in Article 4(1). For this purpose, Member States shall ensure that the national framework entrusts the competent regulatory authorities with the following main regulatory tasks, to:

(a) propose, define or participate in the definition of national nuclear safety requirements;

(b) require that the licence holder complies and demonstrates compliance with national nuclear safety requirements;

(c) verify such compliance through regulatory assessments and inspections;

(d) propose or carry out effective and proportionate enforcement actions.

For information on the powers given to the competent regulatory authority see Article 4(1)e.

The primary Irish legislation governing the protection of workers and members of the public from ionising radiation is the Radiological Protection Act, 1991, and its supplementary legislation - particularly IRR19. These regulations explicitly make the licence holder responsible for all aspects of radiation protection relating to the sources of ionising radiation for which they are authorised. The EPA is responsible for implementing this legislation.

All users of ionising radiation are required to hold an authorisation from the EPA, unless exempted by the legislation. In terms of workforce protection, conditions that must be adhered to include:

- Maintaining records of all radioactive materials and irradiating apparatus
- Keeping records of worker doses, disposals, incidents, faults, and other relevant information involving the authorised items
- Ensuring that any changes to licensed facilities (e.g. new X-ray equipment; relocation of materials or equipment) are submitted by the Radiation Protection Adviser (RPA), or Radiation Protection Officer (RPO) for authorisation by the EPA
- Developing and maintaining Radiation Safety Procedures

- Notifying the local Fire Officer of the location and nature of all sealed and unsealed radioactive sources
- Carrying out an assessment of the potential radiation hazards prior to commencing a practice subject to authorisation
- Ensuring proper labelling of all radioactive materials and irradiating apparatus
- Making sure that all authorised items are subject to routine maintenance in accordance with the manufacturers' instructions, with appropriate quality assurance testing as recommended by the RPA/RPO.

In addition, undertakings must also take all measures necessary to ensure the best possible protection of members of the public and must provide to the EPA, when requested, documents setting out how these measures are ensured.

Article 6: Licence holders

The Directive states that the obligations of transposition and implementation of Articles 6, 8a, 8b, 8c and 8d shall not apply to Member States without nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction Ireland has no nuclear installations and therefore nothing to report under Article 6.

Article 7: Expertise and skills in nuclear safety

> *Article 7*
> *Member States shall ensure that the national framework requires all parties to make arrangements for the education and training for their staff having responsibilities related to the nuclear safety of nuclear installations so as to obtain, maintain and to further develop expertise and skills in nuclear safety and on-site emergency preparedness.*

See Article 5(2)d for the education and training of staff of the Competent Authority. As Ireland has no nuclear installations and the development of such installations is prohibited by law, there are no requirements established

for nuclear operators at present as no nuclear operators exist or are foreseen. There are requirements established on the qualifications and training for key radiological protection roles for licensees.

Article 8: Transparency

9. *Article 8*
10. *1. Member States shall ensure that necessary information in relation to the nuclear safety of nuclear installations and its regulation is made available to workers and the general public, with specific consideration to local authorities, population and stakeholders in the vicinity of a nuclear installation. That obligation includes ensuring that the competent regulatory authority and the licence holders, within their fields of responsibility, provide in the framework of their communication policy:*
11. *(a) information on normal operating conditions of nuclear installations to workers and the general public; and*
12. *b) prompt information in case of incidents and accidents to workers and the general public and to the competent regulatory authorities of other Member States in the vicinity of a nuclear installation.*
13. *2. Information shall be made available to the public in accordance with relevant legislation and international instruments, provided that this does not jeopardise other overriding interests, such as security, which are recognised in relevant legislation or international instruments.*
14. *3. Member States shall, without prejudice to Article 5(2), ensure that the competent regulatory authority engages, as appropriate, in cooperation activities on the nuclear safety of nuclear installations with competent regulatory authorities of other Member States in the vicinity of a nuclear installation, inter alia, via the exchange and/or sharing of information.*
15. *4. Member States shall ensure that the general public is given the appropriate*

Under the Radiological Protection Act, 1991, the EPA is required to provide information to the public on any matters relating to radiological safety which the EPA deems fit. A range of communication activities are undertaken each year to meet this objective. For example, reports on technical assessments of actual or potential nuclear accidents are published on the EPA's website www.epa.ie.

Measures to keep the public informed about a nuclear accident or emergency are addressed in Ireland's National Plan for Nuclear or Radiological Emergency Exposures ("The National Plan").

Arrangements are in place to inform the public of the accident, its consequences and of any countermeasures that are to be implemented to reduce doses to the population. This information would be issued through media channels: radio, television including social media, internet, press statements, press conferences and via national weather forecast broadcasts on television and radio. Regular updates of the situation would be given. In Ireland, Regulation 59 of IRR 2019 outlines the steps that need to be taken to in the event of an emergency where members of the public could be exposed.

Public opinion is an important part of emergency preparedness and comments received from the public are taken into consideration as part of the planning process. Emergency planning developments are published in the Annual Reports of the EPA and other statutory agencies such as local authorities update their emergency planning procedures including for nuclear emergencies on a regular basis. These are also published.

A handbook on emergency planning in Ireland has been prepared for the public which gives basic information on what individual householders can do to improve their own emergency preparedness, information on emergency plans in place and where more detailed information can be obtained. It is available in a bilingual format (English and Irish), in large print, in braille and an easy to read version. It is also available electronically in Polish, Chinese and Russian. The handbook can be downloaded from www.emergencyplanning.ie.

The EPA has a dedicated nuclear/radiological emergency preparedness section on their website [http://www.epa.ie/radiation/emerg/]. These pages provide background information on emergency planning in Ireland for the public and licensees. In addition, the EPA uses the @EPAIreland twitter account as a method of communicating quickly and easily with the general

public. This may be used as one channel to keep the public informed during an emergency response.

Articles 8a to 8d

Articles 8a to 8d
Article 8a: Nuclear safety objective for nuclear installations
Article 8b: Implementation of the nuclear safety objective for nuclear installations
Article 8c: Initial assessment and periodic safety reviews
Article 8d: On-site emergency preparedness and response

Ireland has no nuclear installations and the development of such installations is prohibited by lawand therefore has nothing to report under these Articles.

Article 8e: Peer reviews and reporting

Article 8e (1)
Member States shall, at least once every 10 years, arrange for periodic self-assessments of their national framework and competent regulatory authorities and invite an international peer review of relevant segments of their national framework and competent regulatory authorities with the aim of continuously improving nuclear safety. Outcomes of such peer reviews shall be reported to the Member States and the Commission, when

Ireland hosted an IAEA IRRS review mission in 2015, following a thorough self-assessment, and the final report was presented to Ireland in February 2016. This report set out the review team's assessment of Ireland's compliance with the IAEA's Fundamental Safety Principles and Safety Requirements and included a series of explicit recommendations, suggestions and good practices. Details of all the 36 findings are provided in Appendix 1.

An Action Plan was developed to address the IRRS findings as well as other significant issues identified during the self-assessment phase of the IRRS process and significant progress has been made to date in addressing these findings.

At the time of the review, the International standard (IAEA GSR Part 3) had been updated in line with the most recent ICRP Recommendations (ICRP

103). However, because the 2013 EURATOM BSS had not yet been transposed into Irish Law, the Irish regulatory system was still based on the previous Directive (1996 EURATOM BSS) which was underpinned by earlier ICRP recommendations (IRCP 60). As a consequence, the majority of the individual recommendations and suggestions relate to the updating of Irish Law in line with the new standard. Consequently, the transposition of the 2013 EURATOM BSS into Irish Law in early 2019, together with the development of the EPA's general Code of Practice address many of the IRRS findings.

It should be noted that another significant tranche of the recommendations were addressed through the new regulatory framework for patient protection and the establishment of the Health Information and Quality Authority (HIQA).
A summary of the current situation (June 2020) is as follows:

- Ten findings have been closed with the transposition of the Basic Safety Standards Directive.
- Seven findings are considered partially closed and on track to be closed with confidence, on publication of the general Code of Practice, relevant guidance and the associated Regulatory Fundamentals Document (late 2020/2021).
- Three findings are partially closed and are a matter for DCCAE & DOH.
- Three findings are closed on the basis that ionising radiation functions are now fully integrated into EPA structures and processes.
- Five findings are closed on the basis of EPA administrative and operational arrangements.
- The finding on Radioactive Waste Management Strategy has been closed by Government under Ireland's National Programme with respect to Directive 2011/70/EC.
- Five Emergency Planning and Nuclear Safety related findings have been closed by the revised National Plan for Nuclear and Radiological Emergency Exposures, published in 2019 by Government and by the EPA's 2016-2020 Strategic Plan and associated Emergency Planning and Regulatory Work Programmes.

- One finding in Emergency Planning and Nuclear Safety is considered partially closed and on track to be closed with confidence. This is linked to the Code of Practice and the Emergency Planning and Regulatory Work Programme (late 2020/2021).
- One finding is currently open for the EPA. Work on the National Dose Register is expected to take place in late 2020 and 2021. The use of a unique identification for an exposed worker has yet to be decided, however it is provided for in the IRR19.

Article 8e (2)
Member States shall ensure that, on a coordinated basis:
(a) a national assessment is performed, based on a specific topic related to nuclear safety of the relevant nuclear installations on their territory;
(b) all other Member States, and the Commission as observer, are invited to peer review the national assessment referred to in point (a);
(c) appropriate follow-up measures are taken of relevant findings resulting from the peer review process;
(d) relevant reports are published

Article 8e (3)
Member States shall ensure that arrangements are in place to allow for the first topical peer review to start in 2017, and for subsequent topical peer reviews to take place at least every six years thereafter.

Article 8e(2)(b) of the Directive requires that Member States, other than those who have relevant nuclear installations on their territory, are invited to peer review national assessments based on a specific topic related to nuclear safety.

The EPA is mandated to represent the State on international bodies and fora by way of section 8(n) of the Radiological Protection Act 1991. The EPA has the further function under section 8(a) of the Radiological Protection Act 1991 to “exchange information and to cooperate with the relevant authorities of other States and international organisations concerned with the physical protection of nuclear material and nuclear facilities in relation to the protection

of nuclear material and nuclear facilities and related matters"; and under section 8(e) to exchange information on relevant matters with the relevant authorities in other States and international organisations concerned with nuclear safety and radiological protection.

It is Ireland's policy that the EPA should on the basis of an invitation received under Article 8e(2)(b) of the Directive, participate in that review, subject to the necessary expertise being available to meaningfully contribute to the review.

As an active member of ENSREG, EPA participated in the development of the first topical per review on ageing infrastructure.

Article 8e (4)
In case of an accident leading to situations that would require off-site emergency measures or protective measures for the general public, the Member State concerned shall ensure that an international peer review is invited without undue delay.

No such accident has occurred therefore there is nothing to report under this article.

Appendix: Findings from the 2015 IRRS Review of Ireland's radiological protection system

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
1.	**RESPONSIBILITIES AND FUNCTIONS OF THE GOVERNMENT**	R1	The Government should implement an effective legal framework for the regulation of patient protection. Meanwhile, the Government should, as a matter of urgency, put in place arrangements to carry out inspections and enforcement to ensure patient protection.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		R2	The Government should ensure that the legislation explicitly addresses the following issues in accordance with GSR Part 1: 1. Use of a graded approach in all regulatory activities; 2. Ensure legislation provides for appeals against the decisions of the regulatory bodies in relation to radiation safety and patient protection.
		R3	The Government should make appropriate amendments to facilitate the effective use of the 'Enforcement Notice' provisions in SI125/00.
		R4	The Government should ensure as a matter of urgency that the regulatory body for patient protection does not have responsibilities for or interests in providing medical exposure to ionizing radiation.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		S1	The EPA should consider requiring authorized parties to verify that products and services meet the authorized party's expectations and comply with any relevant regulatory requirement.
		R5	The Government should make formal provision for effective coordination among the EPA, the Irish Aviation Authority, and the Maritime Safety Directorate and between the EPA and the HSE.
		S2	The Government should consider implementing a legislative framework for the remediation of any contamination from past activities or events.
		R6	The Government should ensure that the radioactive waste management strategy including both short and long term storage of radioactive waste, unforeseen decommissioning, remediation and disposal of radioactive waste includes provisions for financial support.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
2.	**RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY**	R7	The EPA should develop a strategic plan for ORP's succession management[1]
		R8	The Government should urgently ensure that the regulatory body that is responsible for patient protection is adequately resourced.
		S3	The regulatory body should consider entering into written agreements with any external adviser to formalize the arrangements and to facilitate the management of any potential conflict of interest.
3.	**MANAGEMENT SYSTEM OF THE REGULATORY BODY**	R9	The EPA should assess gaps in the management system with regard to radiation safety due to the merger of RPII with the EPA, and prioritize actions to develop the management system further in line with GS-R-3 where appropriate.

[1] Note: ORP is now called ORM (EPA's Office of Radiation Protection & Environmental Monitoring)

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		GP1	EPA's radiation safety inspection activities are formally accredited to an ISO standard, which provides for openness and transparency, as well as, continuous assessment and improvement.
		GP2	There is a documented system providing a link between the legislation mandating the organization and individual contribution to delivery of goals, including corporate values and behavioural expectations.
		S4	The EPA should consider assessing and documenting the competence requirements for individual roles in the ORP structure through the planned skills mapping exercise.
		R10	The EPA should further develop and document those processes and procedures relevant to radiation safety not already addressed.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		S5	The EPA should consider ensuring that post-merger ORP functions continue to be taken into account when establishing the audit schedule in the same way as other technical areas of the EPA.
4.	**AUTHORIZATION**	GP3	The EPA/ORP has established a web-based system that allows applications for a new radiological license to be made and for existing licenses to be renewed or amended by following clear step by step instructions on the information to be provided and documents to be uploaded in support of the application.
		S6	The EPA should consider developing further its graded approach by taking into account the interaction between all the elements of the regulatory control.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		S7	EPA should consider assessing the current provisions and co-operation arrangements regarding the import of radioactive sources and to make appropriate proposals, if needed, for establishing arrangements which provide for the Customs to verify systematically that the imported sources are appropriately licensed by the EPA.
		GP4	The systematic co-operation between the EPA and the police significantly supports EPA in the implementation of an integrated approach to safety and security of radiation sources
5.	**INSPECTION**	R11	The EPA inspection program should be extended to verify that the user's management system relating to the transport of radioactive material is implemented and followed correctly.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
6.	**REGULATION AND GUIDES**	R12	The regulatory body should establish policies and processes regarding establishing and amending guidance documents and code of practices relating to radiation safety.
		S8	The EPA should consider the review, and revision if appropriate, of the means (radiological license condition, regulations or guides) of establishing its safety principles, requirements and associated criteria for radiation safety.
		R13	The Government should review the radiological protection regulations to ensure that all the requirements related to public exposure control are in compliance with GSR Part 3.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		GP5	EPA took the initiative to evaluate at the national level the need to install iodine holding tanks in both existing and future iodine ablation facilities. The evaluation reviewed existing practices in Ireland in relation to iodine-131 ablation discharges to the sewers (discharges leading to the highest potential dose) and made recommendations for a regulatory policy, based on international best practice and forecasts of future activity.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		R14	The Government should complement the regulatory framework regarding the: • Predisposal management of radioactive waste activities and facilities should be planned and safely carried out, including the radioactive waste produced during remediation and disused sealed sources and • all aspects of decommissioning of facilities, including the safe management of the resulting radioactive waste should be planned and carried out.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
7.	**EMERGENCY PREPAREDNESS AND RESPONSE**	GP6	The nuclear and radiological emergencies are well integrated on national and regional levels in a framework for major emergency management system and a national emergency coordination system following the all hazards approach. EPA has a key role if a radiation emergency occurs.
		R15	The EPA should establish criteria for the radiological licensees of threat category III facilities for a clear definition and categorization of emergencies. This should also be reflected in the reporting requirements of the licensee.
		S9	The EPA in its role as Governmental advisor for protective measures for the public should consider defining Operational Intervention Levels for protective measures in radiation emergencies.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		GP7	The information to the public on emergency planning prior to an emergency is very efficient in reaching all sectors of the population in Ireland. In addition a coordination mechanism to inform the public in case an emergency has been established under the national emergency coordination group of the Government. The EPA has an important role in these activities for the information of the public.
		R16	The Government should make a formal arrangement for the involvement of stakeholders as part of the emergency management system.
		S10	The Government should consider mechanisms for increasing national measurement capacity to cope with a widespread, long-lasting contamination.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		S11	The EPA should consider finalizing the extension of its NEPNA sub plan to take account of the full resources of the EPA.
		S12	The Government should consider finalizing the revision of the National Emergency Plan for Nuclear Accidents as soon as possible to bring arrangements for the transition from an Emergency Exposure Situation to an Existing Exposure Situation in line with GS-R-2.
		R17	The EPA should establish a systematic oversight on emergency exercises of licensees in threat category III as appropriate including the requirement for the licensee to establish emergency exercise plans which will be evaluated by the EPA.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		R18	The EPA should establish a QA programme in the field of its EPR covering the areas not currently covered, and also the requirements for QA for the licensees in the field of EPR in line with a graded approach.
8.	**CONTROL OF MEDICAL EXPOSURES**	R19	The Government should revise the current regulatory framework to bring it in accordance with GSR Part 3 for the regulation of patient protection.
9.	**OCCUPTIONAL RADIATION PROTECTION**	S13	EPA should consider reviewing its requirements in relation to nomination and qualification of RPOs.
		S14	The EPA should consider extending the scope of the national dose register to enable individually monitored occupationally exposed workers to be unambiguously identified.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
10.	**CONTROL OF CHRONIC EXPOSURES RADON**	GP8	The effectiveness of the national radon control strategy is maximized through this “top down” approach driven by Government, ensuring all stakeholders work together in a cohesive manner.
		S15	The Government should consider provisions to support remediation by owners of homes with high radon levels.
		R20	The Government should review and revise the specific regulations addressing radon in workplaces to enhance their effectiveness
		S16	The regulatory body should consider a plan of how to determine the workplaces with the highest radon levels.