

Council Directive 2014/87/Euratom of 8 July 2014 amending  
Directive 2009/71/Euratom establishing a Community  
framework for the nuclear safety of nuclear installations

COUNCIL DIRECTIVE 2014/87/EURATOM

of 8 July 2014

amending Directive 2009/71/Euratom establishing a Community  
framework for the nuclear safety of nuclear installations

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Articles 31 and 32 thereof,

Having regard to the proposal from the European Commission, drawn up after having obtained the opinion of a group of persons appointed by the Scientific and Technical Committee from among scientific experts in the Member States,

Having regard to the opinion of the European Parliament<sup>(1)</sup>,

Having regard to the opinion of the European Economic and Social Committee<sup>(2)</sup>,

Whereas:

- (1) Council Directive 2013/59/Euratom<sup>(3)</sup> establishes uniform basic safety standards for the protection of the health of individuals subject to occupational, medical and public exposures against the dangers arising from ionising radiation.
- (2) Council Directive 2009/71/Euratom<sup>(4)</sup> imposes obligations on the Member States to establish and maintain a national framework for nuclear safety. That Directive reflects the provisions of the main international instruments in the field of nuclear safety, namely the Convention on Nuclear Safety<sup>(5)</sup>, as well as the Safety Fundamentals<sup>(6)</sup> established by the International Atomic Energy Agency ('IAEA').
- (3) Council Directive 2011/70/Euratom<sup>(7)</sup> imposes obligations on the Member States to establish and maintain a national framework for spent fuel and radioactive waste management.
- (4) Council Conclusions of 8 May 2007 on nuclear safety and safe management of spent nuclear fuel and radioactive waste highlighted that 'nuclear safety is a national responsibility exercised where appropriate in an EU-framework. Decisions concerning safety actions and the supervision of nuclear installations remain solely with the operators and national authorities'.
- (5) The Fukushima nuclear accident in Japan in 2011 renewed attention worldwide on the measures needed to minimise risk and ensure the most robust levels of nuclear safety. Based on the European Council conclusions of 24-25 March 2011, the national competent regulatory authorities, together with the Commission in the framework of the

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European Nuclear Safety Regulators Group (ENSREG), established by Commission Decision 2007/530/Euratom<sup>(8)</sup>, carried out Community-wide comprehensive risk and safety assessments of nuclear power plants ('stress tests'). The results identified a number of improvements which could be implemented in nuclear safety approaches and industry practices in the participating countries.

Moreover, the European Council also called on the Commission to review, as appropriate, the existing legal and regulatory framework for the safety of nuclear installations and propose any improvements that may be necessary. The European Council also stressed that the highest standards for nuclear safety should be implemented and continuously improved in the Union.

- (6) A strong competent regulatory authority with effective independence in regulatory decision-making is a fundamental requirement of the Community nuclear safety regulatory framework. It is of utmost importance that the competent regulatory authority has the ability to exercise its powers impartially, transparently and free from undue influence in its regulatory decision-making to ensure a high level of nuclear safety. Regulatory decisions and enforcement actions in the field of nuclear safety should be based on objective safety-related technical considerations and should be established without any undue external influence that might compromise safety, such as undue influence associated with changing political, economic or societal conditions. The provisions of Directive 2009/71/Euratom on functional separation of competent regulatory authorities should be strengthened to ensure the regulatory authorities' effective independence from undue influence in their regulatory decision-making and to guarantee that they are provided with the appropriate means and competencies to properly carry out the responsibilities assigned to them. In particular, the regulatory authority should have sufficient legal powers, sufficient staffing and sufficient financial resources for the proper discharge of its assigned responsibilities. The strengthened requirements should be however without prejudice to close cooperation, as appropriate, with other relevant national authorities or to general policy guidelines issued by Member States.
- (7) The regulatory decision-making process should take into account competences and expertise, which may be provided by technical support organisations. This expertise should be based on state-of-the-art scientific and technical knowledge, including from operational experience and safety-related research, knowledge management, and adequate technical resources.
- (8) In accordance with Part 1 of the IAEA General Safety Requirements, the role of the Member States in establishing the framework for nuclear safety, and the role of the regulator in implementing that framework, should both be respected.
- (9) Given the specialised nature of the nuclear industry and the limited availability of staff with the required expertise and competence, resulting in the possible rotation of staff with executive responsibility between the nuclear industry and the regulators, special attention should be given to avoiding conflicts of interest. Moreover, arrangements should be made to ensure that there is no conflict of interest for those organisations that provide the competent regulatory authority with advice or services.

- (10) The consequences of a nuclear accident can go beyond national borders, therefore close cooperation, coordination and information exchange between competent regulatory authorities of Member States in the vicinity of a nuclear installation, irrespective of whether those Member States operate nuclear installations or not, should be encouraged. In this respect, Member States should ensure that appropriate arrangements are in place to facilitate such cooperation on nuclear safety matters with cross-border impacts.
- (11) In order to ensure that the proper skills are acquired and that adequate levels of competence are achieved and maintained, all parties should ensure that all staff having responsibilities relating to the nuclear safety of nuclear installations and to on-site emergency preparedness and response arrangements, undergo a continuous learning process. That can be achieved through the establishment of training programmes and training plans, procedures for periodic review and updating of the training programmes as well as appropriate budgetary provisions for training.
- (12) Another key lesson learned from the Fukushima nuclear accident is the importance of enhancing transparency on nuclear safety matters. Transparency is also an important means of promoting independence in regulatory decision-making. Therefore, the current provisions of Directive 2009/71/Euratom on the information to be provided to the general public should be made more specific as to the type of information be provided. In addition, the general public should be given opportunities to participate in the relevant phases of the decision-making process related to nuclear installations in accordance with the national framework for nuclear safety, taking into account the different national systems. Decisions on licensing remain the responsibility of national competent authorities.
- (13) The requirements of this Directive on transparency are complementary to those of the existing Euratom legislation. Council Decision 87/600/Euratom<sup>(9)</sup> imposes obligations on Member States to notify and provide information to the Commission and to other Member States in case of a radiological emergency on their territory, whilst Directive 2013/59/Euratom includes requirements on Member States to inform the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency, and to provide at regular intervals updated information to the population likely to be affected in the event of such an emergency.
- (14) During their 6th Review Meeting, the Contracting Parties to the Convention on Nuclear Safety reiterated their commitment to the findings of the 2nd Extraordinary Meeting which took place after the Fukushima accident. In particular, they stressed that ‘nuclear power plants should be designed, constructed and operated with the objectives of preventing accidents and, should an accident occur, mitigating its effects and avoiding off-site contamination’, and that ‘regulatory authorities should ensure that these objectives are applied in order to identify and implement appropriate safety improvements at existing plants’.
- (15) In view of the technical progress achieved through the provisions of the IAEA and by the Western European Nuclear Regulators Association (‘WENRA’) and responding to the lessons learnt from the stress tests and the Fukushima nuclear accident investigations, Directive 2009/71/Euratom should be amended to include a

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high level Community nuclear safety objective covering all stages of the lifecycle of nuclear installations (siting, design, construction, commissioning, operation, decommissioning). In particular, this objective calls for significant safety enhancements in the design of new reactors for which the state of the art knowledge and technology should be used, taking into account the latest international safety requirements.

- (16) That objective should notably be reached through nuclear safety assessments, which fall under the scope of this Directive. They should be carried out by the licence holders under the control of the national competent regulatory authority and may be used for the assessment of the risk of a major accident, as covered by Directive 2011/92/EU of the European Parliament and of the Council<sup>(10)</sup>, provided that the requirements of this Directive are met.
- (17) The concept of defence-in-depth is fundamental to the safety of nuclear installations and is the basis for implementing high level nuclear safety objectives. Application of the defence-in-depth principles, as recognised in international standards and guidance and by WENRA, ensures that safety activities are subject to, as far as reasonably practicable, independent layers of provisions, so that in the event that a failure were to occur, it would be detected, compensated or corrected by appropriate measures. The effectiveness of each of the different layers is an essential element of defence-in-depth to prevent accidents and mitigate the consequences should they occur. Defence-in-depth is generally structured in five levels. Should one level fail, the subsequent level comes into play. The objective of the first level of protection is the prevention of abnormal operation and system failures. If the first level fails, abnormal operation is controlled or failures are detected by the second level of protection. Should the second level fail, the third level ensures that safety functions are further performed by activating specific safety systems and other safety features. Should the third level fail, the fourth level limits accident progression through accident management, so as to prevent or mitigate severe accident conditions with external releases of radioactive materials. The last objective (the fifth level of protection) is the mitigation of the radiological consequences of significant external releases through the off-site emergency response.
- (18) Together with defence-in-depth, an effective nuclear safety culture is regarded as a fundamental factor in achieving a high level of nuclear safety and its continuous improvement. Indicators for an effective nuclear safety culture include, in particular: the commitment at all levels of staff and management within an organisation to nuclear safety and its continuous improvement; the promotion of the ability of staff at all levels to question the delivery of relevant safety principles and practices to continuously improve nuclear safety; the ability of staff to report safety issues in a timely manner; the identification of the lessons learnt from operational experience; and the systematic reporting of any deviation from normal operating conditions or arrangements relevant to accident management that have the potential to have an impact on nuclear safety. Important elements which help to achieve a strong nuclear safety culture include, in particular, effective management systems, appropriate education and training and arrangements by the licence holder to register, evaluate and document internal and external safety significant operating experience and effective resolution of issues that have been raised.

- (19) Where ‘reasonably practicable’ is used in this Directive it should be applied in accordance with established definitions, in particular the WENRA and IAEA definitions.
- (20) Following the nuclear accidents at Three Mile Island and Chernobyl, the Fukushima nuclear accident highlighted once again the critical importance of the containment function, which is the last barrier to protect people and the environment against radioactive releases resulting from an accident. Therefore the applicant for a licence for the construction of a new power or research reactor should demonstrate that the design limits the effects of a reactor core damage to within the containment, i.e. the applicant should prove that a large or unauthorised radioactive release outside the containment is extremely unlikely, and that applicant should be able to demonstrate with a high degree of confidence that such a release will not occur.
- (21) More specific arrangements for accident management and on-site emergency response should be required to address the prevention and mitigation of accidents. Those should be in accordance and without prejudice to the relevant provisions of the Directive 2013/59/Euratom. The licence holder should provide for procedures, guidelines and arrangements that address accidents including severe accidents, that could occur in all operational modes, including full power, shutdown and transitional states, ensuring consistency and continuity between all such procedures and arrangements, and ensuring that they are exercised, reviewed and updated. Those arrangements should also provide for sufficient staff, equipment and other necessary resources. An organisational structure with clear allocation of responsibilities, and coordination amongst response bodies should be provided.
- (22) The stress tests demonstrated the key role of enhanced cooperation and coordination mechanisms between all parties that have responsibilities for nuclear safety. The peer-reviews have proved to be a good means of building confidence, with the aim of developing and exchanging experience and ensuring the common application of high nuclear safety standards.
- (23) Cooperation on nuclear safety between Member States is well established and can give added value in terms of nuclear safety, transparency and openness towards stakeholders at the European and international level.  
Member States, through their competent regulatory authorities making relevant use of ENSREG, and building on the expertise of the WENRA, should every six years define a methodology, Terms of Reference and a time frame for Peer Reviews on a common specific technical topic related to the nuclear safety of their nuclear installations. The common specific technical topic to be considered should be identified among the WENRA safety reference levels or on the basis of operating experience feed-back, incidents and accidents and technological and scientific developments. Member States should perform a national self-assessment and make arrangements for common peer reviews by other Member States' competent regulatory authorities of their national self-assessment.  
Reports on the findings of those peer reviews should be produced. Member States should establish national action plans for addressing any relevant findings and their own

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national assessment, taking into account the results of those peer review reports. The peer review reports should also form the basis of any summary report of the outcome of the Union-wide topical peer review exercise prepared collectively by the competent regulatory authorities of the Member States. The summary report should not aim to rank the safety of nuclear installations but rather focus on the process and technical findings of the topical peer review so that the knowledge gained from the exercise can be shared. Reciprocal trust should prevail in peer reviews, and it would therefore be appropriate for the Commission, whenever practicable, to inform Member States when it intends to use the results of peer review reports in its policy documents.

- (24) The obligations of the Member States to report on the implementation of this Directive and the obligation of the Commission to draw up a report on the basis of the national reports should provide an opportunity to take stock of, and evaluate, the various aspects of the implementation of this Directive as well as its effectiveness. A number of relevant reporting obligations, such as the Convention on Nuclear Safety reports, exist at international level, the results of which might be used for the evaluation of the implementation of this Directive. Moreover, additional reporting requirements should be established under this Directive in relation to the findings of the topical peer reviews of nuclear installations. Consequently, with a view to simplifying the legislation and reducing the administrative burden, the reporting obligation for the Member States should be made less onerous both as regards the frequency of reporting and the content of the reports.
- (25) In line with a graded approach, the implementation of the provisions of this Directive depends on the types of nuclear installations on the territory of a Member State. Therefore, when implementing these provisions in national law, Member States should take into account the potential magnitude and nature of risks posed by the nuclear installations that they plan or operate. In particular, the graded approach should concern those Member States that keep only a small inventory of nuclear and radioactive materials, e.g. those linked to the operation of smaller research reactor facilities, which in case of a severe accident would not engender consequences comparable to those generated by nuclear power plants.
- (26) The provisions of this Directive which are intrinsically linked to the existence of nuclear installations, namely those concerning the licence holder's obligations, the new specific requirements for nuclear installations and the provisions concerning on-site emergency preparedness and response should not be applicable to Member States without nuclear installations. The provisions of this Directive should be transposed and implemented in a proportionate manner in accordance with national circumstances and taking into account the fact that those Member States do not have nuclear installations, whilst ensuring that nuclear safety receives appropriate attention by the government or by the competent authorities.
- (27) According to Directive 2009/71/Euratom, the Member States have to establish and maintain a national legislative, regulatory and organisational framework for the nuclear safety of nuclear installations. The decision as to how the provisions of the national

framework are adopted and through which instrument they are applied rests with the competence of the Member States.

- (28) In accordance with the Joint Political Declaration of 28 September 2011 of Member States and the Commission on explanatory documents, Member States have undertaken to accompany, in justified cases, the notification of their transposition measures with one or more documents explaining the relationship between the provisions of a directive and the corresponding parts of national transposition instruments. With regard to this Directive the legislator considers the transmission of such documents to be justified.
- (29) Directive 2009/71/Euratom should therefore be amended accordingly,

HAS ADOPTED THIS DIRECTIVE:

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- (1) Opinion of 2 April 2014 (not yet published in the Official Journal).
- (2) [OJ C 341, 21.11.2013, p. 92.](#)
- (3) Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom ([OJ L 13, 17.1.2014, p. 1.](#))
- (4) Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations ([OJ L 172, 2.7.2009. p. 18.](#))
- (5) Commission Decision 1999/819/Euratom of 16 November 1999 concerning the accession to the 1994 Convention on Nuclear Safety by the European Atomic Energy Community (Euratom) ([OJ L 318, 11.12.1999, p. 20.](#))
- (6) IAEA Safety Fundamentals: Fundamental safety principles, IAEA Safety Standard Series No SF-1 (2006).
- (7) Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste ([OJ L 199, 2.8.2011. p. 48.](#))
- (8) Commission Decision 2007/530/Euratom of 17 July 2007 on establishing the European High Level Group on Nuclear Safety and Waste Management ([OJ L 195, 27.7.2007, p. 44.](#))
- (9) Council Decision of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency ([OJ L 371, 30.12.1987, p. 76.](#))
- (10) Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment ([OJ L 26, 28.1.2012, p. 1.](#))