EU Law on Nuclear Safety

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The European Union (EU) is the first major regional nuclear actor to provide a binding legal framework on nuclear safety. The EU Council unanimously adopted Directive 2009/71 establishing a Community framework for the safety of nuclear installations in June 2009. The Directive builds primarily on the safety standards developed by the International Atomic Energy Agency and the provisions of the 1994 Convention on Nuclear Safety. Nuclear safety standards are now part of EU law and are enforceable before the European Court of Justice and national courts of EU Member States. Importantly, the Directive represents the first step towards the harmonisation of safety standards across the EU and should contribute to improving public confidence in the nuclear sector across the EU.

Recent years have seen a renewed interest in nuclear energy among European Union (EU) Member States. With 144[1] nuclear power reactors operating in 15 Member States, the EU has the largest number of nuclear power plants (NPPs) in the world.[2] At present, nuclear energy provides one-third of the EU's electricity supply and represents 15 per cent of the total energy consumed in the EU.[3]

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1 For details regarding the number, location and size of the nuclear power reactors located in the EU see http://ec.europa.eu/energy/nuclear/decommisioning/decommissioning_en.htm and http://www.euronuclear.org/info/encyclopedia/n/nuclear-power-plant-europe.htm.

2 European Commission, *Communication from the Commission to the Council and the European Parliament – Nuclear Illustrative Programme Presented under Article 40 of the Euratom Treaty for the opinion of the European Economic and Social Committee*, COM(2006) 844, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri= CELEX:52006DC0844:EN:NO.

3 European Commission, *Nuclear Energy*, http://ec.europa.eu/energy/nuclear/index_en.htm.

The nuclear energy renaissance is being spurred by growing electricity demand, concerns about security supply of energy and climate change. First, with electricity demand continuing to grow, new NPPs will need to be constructed and/or the operating lifetime of existing plants extended simply to maintain the existing share of nuclear energy of total electricity production. The fact that many NPPs are expected to be decommissioned in the next 20 years given their relatively old age (average 25 years old) is increasing pressure to build new NPPs.[4]

Secondly, the EU Commission (the 'Commission') identified nuclear energy as a potentially important element of ensuring the EU's security of supply in its Second Strategic Review.[5] With the EU's energy production satisfying less than half of its needs, there are concerns about growing import dependency.[6] The gas war between the Ukraine and Russia in January 2009, which left a number of countries in south-east Europe without electricity for nearly two weeks, further exposed the EU's energy vulnerability and led to calls to increase the share of nuclear energy in the EU's energy mix. Although most of the uranium needed for the operation of NPPs in the EU is imported, nuclear energy is seen as a domestic energy source. Moreover, with over 40 per cent of all uranium produced in Canada and Australia,[7] there is little concern in the EU about import dependency in respect of nuclear energy.

Thirdly, being essentially carbon emissions free, nuclear energy is seen as one of the options for meeting the EU's target for reducing greenhouse gas emissions by 20 per cent by 2020 and, thus, tackling climate change.

Although the European Atomic Energy Community (EAEC or Euratom) has been in existence since 1957,[8] nuclear safety had not been regulated at the EU level. The above-mentioned increase in interest in nuclear energy, however, led to calls for the adoption of an EU framework for nuclear safety

4 ENSREG, *Discussion document on Consequences of EU instruments in the field of Nuclear Safety, Final Report*, http://circa.europa.eu/Public/irc/tren/nuclear_safety_and_waste/library?l=/general_archive/public/p2009-08_instrumentspdf_2/_EN_1.0_&a=d, at 19.

5 European Commission, *Second Strategic Review*, November 2008, http://ec.europa.eu/energy/ strategies/2008/2008_11_ser2_en.htm.

6 European Commission, *An EU Energy Security and Solidarity Action Plan, Europe's Current and Future Energy Position, Demand – Resources – Investments*, COM(2008) 781 final, November 2008, http://ec.europa.eu/energy/strategies/2008/doc/2008_11_ser2/strategic_energy_review_wd_future_position2.pdf, at 8.

7 According to the World Nuclear Association, Canada was the world's largest producer of uranium, producing 20.5 per cent of the world's uranium from mines, and Australia the third largest producer in 2008. For further details see www.world-nuclear.org/info/inf23.html.

8 Euratom was created pursuant to the Euratom Treaty in 1957. Together with the European Coal and Steel Community and European Economic Community it formed part of the European Communities. Euratom has continued to exist as a separate legal organisation after the other two communities were absorbed by the European Union. For details of the Euratom Treaty, see note 21 below.

to ensure greater harmonisation of national safety standards concerning the installation, operation and decommissioning of NPPs. Concerns over the safety of NPPs in 'new'[9] Member States, a key issue during the EU accession negotiations, lent further support to such calls.[10]

The Commission considers nuclear safety crucial to Member States' decisions on whether to continue to use nuclear energy, as well as for improving public confidence across the EU in the nuclear sector. To achieve these aims, Euratom Council Directive 2009/71 establishing a Community framework for the nuclear safety of nuclear installations (the 'Directive') was unanimously adopted by the EU Council on 25 June 2009.[11]

This article discusses the key provisions of the Directive highlighting any differences between its terms and those of the 1994 Convention on Nuclear Safety (the 'Convention'). By way of background, the paper first examines the international and EU framework for nuclear safety.

International framework for nuclear safety

Until the adoption of the Directive, the regulation of nuclear safety was the responsibility of each Member State. All Member States that operate nuclear facilities for the generation of electricity are parties to the Convention, as well as other multilateral agreements that concern fuel and waste management.[12] In addition, as members of the International Atomic Energy Agency (IAEA), they comply with the soft law safety standards adopted by the IAEA and, in particular, with the Fundamental Safety Principles, Safety Standards Series No SF-1 (the 'Fundamental Safety Principles').[13]

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9 The 'new' Member States are Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. They joined the EU in May 2004.

10 During the accession negotiations the EU requested that eight NPPs (Bohunice 1 and 2, Kozloduy 1 to 4 and Ignalina 1 and 2) in Lithuania, Bulgaria and Slovakia be closed over the 2002 to 2009 period. Further details are available at http://ec.europa.eu/enlargement/archives/enlargement_process/future_prospects/negotiations/eu10_bulgaria_romania/chapters/chap_14_en.

11 *OJ 2009 L 172/18*. The text of the Directive is available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0071:EN:HTML.

12 These being: the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (available at www.iaea.org/Publications/Documents/Infcircs/1997/infcirc546.pdf), the 1986 Convention on Early Notification of a Nuclear Accident (available at www.iaea.org/Publications/Documents/Infcircs/Others/infcirc335.shtml) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (available at www.iaea.org/Publications/Documents/Infcircs/Others/infcirc336.shtml).

13 L Veuchelen, 'The Legal Value of General Principles, Technical Norms and Standards in European Nuclear Safety Law: The Imbalance Between Soft and Hard Law and the Need for Global Regulatory Governance' (2009) 18 *E E Envir L R* 215, 216 et seq.

Since the terms of the Directive are based on the terms of the Convention and certain principles set out IAEA Standards these documents will be discussed in turn.

Convention on Nuclear Safety

The Convention was adopted in Vienna in 1994 and entered into force in 1996. It commits state parties operating land-based civil NPPs to maintaining a high level of safety by setting international benchmarks concerning nuclear safety. The obligations of the contracting parties cover the siting, design, construction and operation of NPPs, as well as the establishment of a legislative and regulatory framework for safety of nuclear installations, the effective separation between regulatory bodies and other bodies or organisations concerned with the promotion or utilisation of nuclear energy, the availability of adequate financial and human resources, the assessment and verification of safety, quality assurance and radiation protection and emergency preparedness.[14]

However, the Convention is only an 'incentive' instrument. It does not contain any mechanism for enforcement or sanction in case of non-compliance. Instead, it depends for its effectiveness on a process of peer review and, by extension, peer pressure. Specifically, Articles 5, 20 and 21 of the Convention require each contracting party to report every three years at the meeting of the IAEA to other contracting parties on the measures taken to meet the nuclear safety obligations set out in the Convention. At these meetings, pursuant to Article 20, other contracting parties can comment on the measures adopted and seek clarifications. During the process of review contracting parties are encouraged to implement improvements recommended by other contracting parties and the IAEA.[15]

IAEA standards

The IAEA seeks to build and strengthen the international safety and security regime through the development of advisory international standards, codes and guides. In the safety area, these cover nuclear installations, radioactive sources, radioactive materials in transport and radioactive waste.

In 2006, the Fundamental Safety Principles were adopted by the IAEA. The document sets out ten fundamental safety principles constituting 'the basis

14 For the terms of the Convention see www.iaea.org/Publications/Documents/Infcircs/Others/ inf449.shtml.

15 Veuchelen, note 13 above, loc cit.

on which to establish safety requirements for protection against exposure to ionizing radiation under the IAEA's safety standards programme and provide the rationale for its wider safety related programme medicine, industry, agriculture, research and education'.[16] The ten principles are:

1. The prime responsibility for safety must rest with the person or organisation responsible for facilities and activities that give rise to radiation risks.
2. An effective legal and governmental framework for safety, including an independent regulatory body, must be established and sustained.
3. Effective leadership and management for safety must be established and sustained in organisations concerned with, and facilities and activities that give rise to, radiation risks.
4. Facilities and activities that give rise to radiation risks must yield an overall benefit.
5. Protection must be optimised to provide the highest level of safety that can reasonably be achieved.
6. Measures for controlling radiation risks must ensure that no individual bears an unacceptable risk of harm.
7. People and the environment, present and future, must be protected against radiation risks.
8. All practical efforts must be made to prevent and mitigate nuclear or radiation accidents.
9. Arrangements must be made for emergency preparation and response to nuclear or radiation incidents.
10. Protective actions to reduce existing or unregulated radiation risks must be justified and optimised.

The IAEA must apply these principles in its own operations. However, these principles are not binding on Member States as they are non-mandatory recommendations only.[17]

Other organisations, including the Organisation for Economic Co-operation and Development (OECD), assist member countries in maintaining and further developing, through international cooperation, the scientific, technological and legal bases required for the safe, environmentally friendly and economic use of nuclear energy for peaceful purposes. For example the Nuclear Energy Agency, a specialised agency within the OECD and the

16 See Fundamental Safety Principles, Safety Standards Series No SF-1, www-pub.iaea.org/MTCD/publications/PDF/ Pub1273_web.pdf, at viii.

17 See para 1.5 of the Fundamental Safety Principles, *ibid* 2.

only intergovernmental nuclear energy organisation bringing together the developed countries of North America, Europe and the Asia-Pacific, is a forum for exchange of experience concerning nuclear energy. It has, inter alia, adopted consensus positions on nuclear safety, radioactive waste management and radiological protection and enables member countries to join forces to carry out research or scientific inter-comparison exercises on a cost-sharing basis.[18]

Over the years, this framework of organisations and conventions has resulted in the significant harmonisation of national nuclear safety rules. However, significant differences remain between the national regulatory and organisational frameworks and, more importantly, there is no mechanism of enforcement or sanction in case of lack of compliance with the terms of the Convention or the IAEA standards.

EU framework for nuclear safety

For historical and other reasons, nuclear energy and nuclear safety are regulated somewhat differently from other sectors under EU law.[19] The Treaty establishing the European Atomic Energy Community (the 'Euratom Treaty') was adopted in 1957.[20] The purpose of the Treaty was to create among the Member States conditions for the establishment and growth of the nuclear industry.[21] The specific tasks accorded to Euratom under the Euratom Treaty include to:

- promote research and ensure the dissemination of technical information;
- establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied;

18 Further details regarding the work of the Nuclear Energy Agency are available at www.nea.fr/html/nea/flyeren.html.

19 Moreover, it should be noted that the European Community institutions do not have explicit competence in the energy area, although energy-related Community legislation has been adopted since the late 1960s based on general non-energy provisions and principles of the EC Treaty. The Lisbon Treaty, which at the time of writing is expected to enter into force in December 2009, contains a new energy title which provides express competence to Community institutions in the sphere of energy including to ensure the functioning of the internal market security of energy supply and energy efficiency. For further details see Art 194 of the Lisbon Treaty, available at http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2008:115:SOM:EN:HTML. For further details concerning the history of EU acquis in energy law and policy see B Delvaux, M Hunt and K Talus, *EU Energy Law and Policy Issues* (Euroconfidential, 2007) 17–29.

20 Treaty establishing the European Atomic Energy Community, http://eur-lex.europa.eu/en/treaties/dat/12006A/12006A.html.

21 As such, there is no provision under EU law creating an internal market for nuclear energy as is the case in respect of electricity and gas.

- facilitate investment and ensure the establishment of the basic installations necessary for the development of nuclear energy in the EU;
- ensure that all users in the EU receive a regular and equitable supply of ores and nuclear fuels; and
- make certain that civil nuclear materials are not diverted to other (particularly military) purposes.[22]

Ensuring the safety of nuclear installations is not a responsibility explicitly granted to the Community by the Euratom Treaty. Article 2(b) of the Euratom Treaty provides for the establishment of uniform safety standards to protect the health of workers and of the general public. Article 30 further provides that basic standards shall be laid down 'within the Community for the protection of health of workers and the general public against the dangers arising from ionising radiations'. The term 'basic standards' is defined in the same article as maximum permissible doses compatible with adequate safety, maximum permissible levels of exposure and contamination and the fundamental principles governing the health surveillance of workers. Until 2002, Article 30 was considered as giving Community institutions competence to adopt directives and recommendations in the field of radiation protection and waste management only.[23] In 2002, the European Court of Justice (ECJ) clarified in Case 29/99[24] that the Community shares competences with Member States in respect of nuclear safety as well as radiation protection.

The adoption of common EU nuclear safety standards has been under discussion for a number of years. The Commission argued that national legislation in the nuclear field and measures taken by the national regulators are not sufficient from the Community perspective since, despite a degree of harmonisation discussed above, nuclear safety measures still vary from one Member State to another. This, it argued, did not allow the Community to satisfy itself that the health protection requirements of Article 2(b) of the Euratom Treaty were complied with.

22 See Art 2 of the Euratom Treaty.

23 Radiation protection refers to measures aimed at protecting human beings and the environment against ionising radiation. On the other hand, nuclear safety deals with measures aimed at establishing and maintaining effective defences in nuclear installations against potential radiological risks in order to protect individuals, society and the environment against the damaging effects of ionising radiation emitted by such installations. Traditionally, radiation protection and nuclear safety were considered as separate disciplines. For further details see Communication from the Commission to the Council and the European Parliament – Nuclear safety in the European Union, COM/2002/0605 final, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52002DC0605:EN:HTML.

24 OJ 2009 L 172/18, http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:172:0018:01:EN:HTML.

However, previous Commission proposals seeking to harmonise nuclear safety standards met with resistance from certain Member States (including the UK and Germany), which were concerned that such proposals reduced the powers of national regulators in this strategically important industry.[25]

In 2004, the EU Council started a wide-ranging consultation process on the use by Member States of existing international instruments on nuclear safety and management of radioactive waste and spent fuel. This eventually led to the establishment of the High Level Group on Nuclear Safety and Waste Management – the European Nuclear Safety Regulators Group (ENSREG).[26] The ENSREG is an independent expert body composed of heads and senior staff members of national nuclear safety or regulatory authorities from all Member States as well as a senior representative from the Commission.

In 2007, ENSREG considered whether there was a need for a legally binding instrument on nuclear safety at the EU level. As its members were highly divided, an agreement was reached to set up a group to analyse the pros and cons of such EU legislation (on the basis of a set of agreed principles) before any legislation was proposed. It was agreed that the following principles would be used to prepare the analysis:

1. Maintain and seek to continuously improve nuclear safety and its regulation, and add value.
2. Just as every Member State has the right to decide to use nuclear power or not, so every Member State has the right to impose more stringent nuclear safety requirements than those commonly applied.
3. Allow flexibility and not fundamentally change a Member State's national nuclear regulatory approach.
4. Seek to enhance, not reduce, the power, roles, responsibilities or capability of the national nuclear regulatory body.
5. Do not expand the role of the Commission in regulatory decision-making or activities or introduce other bodies.
6. Do not divert resources away from national nuclear regulatory responsibilities or international nuclear safety cooperation.
7. Be compliant with the principles/obligations of the Convention on Nuclear Safety.

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25 R Axelrod, 'The European Commission and Member States: Conflict Over Nuclear Safety' (2006) 26 *Perspectives. Review of International Affairs* 5, 5.

26 Commission Decision 2007/530 Euratom of 17 July 2007 on establishing the European High Level Group on Nuclear Safety and Waste Management, OJ 2007 L 195/44, available at http://circa.europa.eu/Public/irc/tren/nuclear_safety_and_waste/library?l=/general_archive/public/hlg200711ppdf/_EN_1.0_&a=d.

8. Any proposals should be non-discriminatory towards those who use or do not use nuclear power.
9. Seek to improve the transparency of nuclear safety and its regulation.
10. Be clear on the roles and responsibilities of any organisations involved.[27]

Based on the analysis, in November 2008, the Commission tabled a revised directive on nuclear safety.[28] Subsequent revision of the proposal paved the way for the adoption of the Directive on 25 June 2009.

Key provisions of the Directive

The Directive incorporates the provisions of the Convention as well as some of the IAEA's safety standards and principles set out in the Fundamental Safety Principles. Since Member States, as well as Euratom,[29] are parties to the Convention, most of the provisions of the Directive will not be new to them. The innovation of the Directive is that it imposes legally enforceable obligations on Member States concerning nuclear safety, a failure to comply with which can result in sanctions being imposed against them under EU law. Member States have until July 2011 to transpose the Directive into national law.[30]

In this section, the key provisions of the Directive are set out and any differences between them and those of the Convention highlighted.

Scope of the Directive

The Directive concerns the nuclear safety of civilian nuclear installations. The term 'nuclear installations' is defined in Article 3(1) as '(a) an enrichment plant, nuclear fuel fabrication plant, nuclear power plant, reprocessing plant, research reactor facility, spent fuel storage facility and (b) storage facilities for radioactive waste that are on the same site as and are directly related to

27 ENSREG, *Report of the European Nuclear Safety Regulators Group*, July 2009, at 13, available at http://ec.europa.eu/energy/nuclear/ensreg/doc/2009_ensreg_report.pdf.

28 European Commission, Nuclear Safety: Commission moves ahead, Press Release, 26 November 2008, http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1776&format=HTML&aged=0&language=en&guiLanguage=en.

29 Euratom became a party to the Convention in January 2000.

30 Under EU law a regulation is binding in its entirety and directly applicable in all Member States, while a directive is binding on Member States as to the result to be achieved, but leaves the choice of form and methods of implementation to them. Since directives are not directly applicable they have to be transposed by Member States into national law before their provisions have legal effect. For further details regarding the difference between directives and regulations see P Craig and G Burca, *EU Law, Text, Cases and Materials* (4th edn, Oxford University Press, 2007) 20 et seq.

the nuclear installations listed under point (a)'. As such, the scope of the Directive is broader than that of the Convention, which applies only to any land-based civilian NPPs and any 'storage, handling and treatment facilities for radioactive materials as are on the same site' as the NPP and 'are directly related to the operation of such NPP'.[31] Member States that have adopted the Convention's narrower definition of the term will need to amend their law to ensure proper implementation of the Directive.

Competence sharing concerning nuclear energy

Recitals 8 and 9 of the Directive emphasise that each Member State is free to decide on its energy mix and that nuclear safety remains the responsibility of each Member State. As such, pursuant to the Directive, the competence of the EU Community institutions is to ensure:

- the adoption of uniform Community-wide safety standards; and
- the compliance of Member States with the terms of the Directive.[32]

Going forward, nuclear safety standards will be proposed by the Commission and adopted by the EU Council in accordance with the procedure set out in Articles 31 and 32 of the Euratom Treaty. The ENSREG will take a leading role in drafting Community-wide safety standards.[33]

A Member State's implementation of the Directive is ensured by the enforcement mechanism set out in the Euratom Treaty. Pursuant to Articles 141 to 143 of the Euratom Treaty the Commission and Member States have the right to commence proceedings against a Member State before the ECJ should it fail to implement the Directive and comply with safety standards.

It is important to note that the Directive does not prevent Member States from adopting safety measures that are more stringent than those covered by the Directive, provided this is done in compliance with Community law (see Article 2(2)). Moreover, the Directive makes clear that in developing a national framework for nuclear safety the specific circumstances of the Member State in question may be taken into account.[34] As such, rather than prescribing a legislative and regulatory framework for nuclear safety, the Directive provides a safety net, ensuring a minimum level of nuclear safety within the EU. In this respect its aim is similar to that of the Convention.

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31 See Art 2(i) of the Convention.

32 It will be interesting to see how the competences granted to Community institutions under Art 194 of the Lisbon Treaty will be interpreted with respect to nuclear energy. For further details, see note 19 above.

33 See Art 2 of the Commission Decision of 17 July 2007 on establishing the European High Level Group on Nuclear Safety and Waste Management, note 26 above.

34 See para 10 in the Preamble to the Directive.

Obligation to establish a framework

Pursuant to Article 4 of the Directive, a Member State is required, as a matter of EU law, to establish a national legislative, regulatory and organisational framework for the safety of nuclear installations. The framework must allocate responsibilities and provide for coordination between the various state bodies involved in nuclear safety.

Incorporating the provisions of Article 7 of the Convention and reflecting the second of the Fundamental Safety Principles, the Directive provides in Article 4(1) that the responsibilities for the following areas must be provided under the framework:

- the adoption of national nuclear safety requirements;
- the provision of a system of licensing and prohibition of operation of nuclear installations without a licence;
- the supervision of nuclear safety; and
- enforcement actions, including suspension of operation and modification or revocation of a licence.

Member states retain the discretion to choose how to meet nuclear safety requirements.[35]

Recognising that a national framework is a living document, Article 4(2) requires a Member State to ensure that it is maintained and improved in the light of operational experience, technological developments, the outcomes of safety analyses and the results of safety research. Since the Directive's requirements regarding the framework are substantially the same as those under the Convention, Member States with nuclear installations will already have frameworks in place, which comply with most of the requirements of the Directive. As such, the Directive will not require significant changes in national law. For non-nuclear Member States, the Directive provides a legal basis should the state choose to build nuclear installations in the future.

Effective independence and powers of regulatory bodies

Article 5(2) of the Directive obliges Member States to ensure the 'effective independence' of the national regulatory body for nuclear safety from other bodies and organisations concerned with the promotion or utilisation of nuclear energy. In other words, it requires not only de jure but also de facto independence. Although Article 8(2) of the Convention requires 'effective separation' rather than 'effective independence' of

35 See Art 4(1)(a) of the Directive.

regulatory bodies, it is unlikely that the two tests will be construed as imposing different requirements.

The Directive spells out the powers that should be accorded to the regulatory authority by Member States to ensure they comply with their obligations regarding the Framework as set out in Article 4(1) (see discussion on the legal framework above).

Licence-holders' primary obligation for nuclear safety

As under the Convention and the third principle of the Fundamental Safety Principles, Article 6 of the Directive emphasises that the licence-holder has primary responsibility for the nuclear safety of a nuclear installation. Article 6 also provides that such responsibility cannot be delegated.

Member States are required to ensure licence-holders regularly assess, verify and continuously improve (as far as is reasonably achievable) the nuclear safety of their nuclear installation(s). This has to be done in a systemic and verifiable manner and under the supervision of the competent national regulatory authority. In addition, as discussed above, Member States must ensure that actions are taken, including revocation of licence, in case a licence-holder fails to comply with its obligations regarding safety standards.

In addition, and as under the Convention, the Directive requires the licence-holders to provide and maintain adequate financial and human resources to fulfil their obligations with respect to nuclear safety.[36] Member States are also required to ensure that arrangements are made by regulatory authorities and licence-holders for the education and training of staff with responsibility for the nuclear safety of nuclear installations.[37]

Reporting obligations

The Directive establishes a uniform reporting structure at the Community level. Under Article 9, Member States must submit a report to the Commission on the implementation of the Directive for the first time in 2014 and thereafter every three years. Pursuant to Article 9(2) of the Directive, the Commission is required to submit a report to the EU Council and Parliament on the progress made to implement the Directive on receipt of reports from Member States.

The reporting requirements differ from those under the Convention.

36 See Art 6(5) of the Directive.

37 See Art 7 of the Directive.

Under the Convention, a contracting party is required to submit a report every three years at the meeting of the IAEA to other contracting parties for their review and comment. As discussed above, there is no mechanism of enforcement or sanction in the case of non-compliance with the reporting requirements or recommendations made by other state parties. Instead, the Convention depends for its effectiveness on a process of peer review and, by extension, peer pressure. Under the Directive, the reporting requirements are enforceable under Community law both by the Commission and Member States pursuant to Articles 141 and 142 of the Euratom Treaty respectively.

In addition, under the Directive, Member States are required to conduct self-assessments of segments of their framework (as chosen by that Member State) every ten years and subject it to international peer review. This mirrors the process of the peer review mechanism in place under the Convention. However, this process is compulsory rather than voluntary in nature.

The Directive seeks to synchronise the timing of the preparation of the reports under the Convention and the Directive so as to reduce the reporting burden on Member States.[38] However, although initially the reports under the Directive and Convention will be substantially similar, it is likely that as new standards are adopted at the Community level the nature and the scope of the two sets of reports will start to diverge.

Conclusion

The Directive sets out the first legally binding Community-wide rules concerning nuclear safety. It incorporates the provisions of the Convention into Community law as well as certain of the IAEA's soft law fundamental principles. In particular, it requires Member States to establish a national regulatory, legislative and organisational framework concerning nuclear safety and ensure effective independence of the national regulatory authorities concerned with nuclear safety. Member States have until July 2011 to transpose the Directive into national law.

While all Member States are parties to the Convention, the latter is only an incentive instrument, which depends for its effectiveness on a process of peer review and, by extension, peer pressure. The Directive, on the other hand, imposes on Member States legally binding obligations, which can now be enforced through the enforcement mechanism of the Euratom Treaty. Accordingly, going forward, disputes such as the one that arose between the Czech Republic and Austria concerning the

38 See Art 9 of the Directive.

starting-up of the Temelin NPP in the Czech Republic could be resolved before the ECJ.[39]

The main shortcomings of the Directive are that it does not provide for surprise inspections of NPPs and independent verifications will continue to be undertaken by national regulators rather than by Community institutions. This, plus the fact that the reports are unlikely to be made public (see 'Reporting obligations' above), means that the Directive may in practice contribute little to enhancing nuclear safety in the EU and increasing public confidence in nuclear energy.

Despite these shortcomings, the Directive represents a first step towards the adoption of uniform and more detailed Community-wide standards concerning nuclear safety including in respect of the design, operational and decommissioning requirements. Unlike the IAEA safety standards, which are non-mandatory recommendations, these Community safety standards will be legally binding since they will be adopted pursuant to Articles 30 to 32 of the Euratom Treaty. Accordingly, the process for their adoption and adaptation at the Community level is likely to be much quicker compared to the IAEA's intergovernmental decision-making process. ENSREG is expected to issue a good practice guidance to Member States concerning transparency at the end of November 2009.[40] A dedicated EU website providing the public and other stakeholders with coordinated and easily accessible information on nuclear safety across the EU is expected to go live at the end of 2009.[41]

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39 The dispute between the two countries arose in 1998. In 2000, the Commission acted as conciliator between the two countries and a protocol was signed between them to embark on a 'trialogue' between Austria, the Czech Republic and the Commission on the 29 issues that were of concern to the Austrian authorities. On 29 November 2001, the two countries agreed, under the mediation of the Commission, to enter into a bilateral agreement for the monitoring of the protocol whereby Austria was given a 'watching brief over the safety of [Temelin]. This watching brief of one State over the nuclear safety of an installation in another State is an atypical mechanism. Clearly, if there had been common safety standards, the solution would have been much simpler. These standards would have served as a reference for Austria and taken over by the Czech Republic as part of the Community acquis. The Commission would then have intervened as a matter of course to verify that the acquis had been suitably taken over'. European Commission, note 24 above, Section 1.1. For further details regarding this dispute see R Axelrod, 'Nuclear Power and EU Enlargement: The Case of Temelin' (2004) 13 *Environmental Politics* 153.

40 ENSREG, note 27 above, at 9.

41 Further information about ENSREG and its work is available at http://ec.europa.eu/energy/nuclear/ensreg/ensreg_en.htm.