

National Legislative and Regulatory Activities

Belarus

General Legislation

Act on the Use of Atomic Energy (2008)

The act is reproduced under texts following this chapter together with the Decree on steps to be taken for the construction of a nuclear power plant (see Nuclear Law Bulletin No. 81) and the Regulation on the Department for Nuclear Safety and Radiation Protection of the Ministry for Emergency Situations of the Republic of Belarus (see Nuclear Law Bulletin No. 81).

The Act on the Use of Atomic Energy of 30 July 2008 establishes a comprehensive legal framework governing the siting, planning, construction, commissioning, operation, life extension and decommissioning of nuclear installations and storage facilities. Included in this framework are requirements relating to physical protection, emergency preparedness and emergency response, liability for nuclear damage, responsibilities of operators, rights of workers and the management of nuclear materials, spent nuclear fuel and/or operational radioactive wastes.

Article 3 of the act stipulates that activities involving the use of atomic energy shall be based on the following principles:

- Protection of the life and health of present and future generations and protection of the environment from such activities.
- Ensuring that the benefit to citizens and the public outweighs the damage that may be caused by such activities.
- Ensuring nuclear safety and radiation protection.
- Compensating damage caused by ionizing radiation or by such activities.
- Providing complete, reliable and timely information, unless such information contains state secrets and is classified as restricted information.
- Prohibition of the production of nuclear weapons and other nuclear explosive devices.

The act assigns responsibilities to the Ministry of Energy, the Ministry for Emergency Situations, Republic-level state control agencies and other state organisations. It is notably the Ministry for Emergency Situations which shall ensure nuclear safety, radiation protection, physical protection, management of spent nuclear fuel and radioactive waste [Article 7(2)].

Chapter 9 of the act deals with liability for damage caused by a radiation accident, providing that damage caused to organisations and individuals shall be subject to compensation by the operator (Article 35). Environmental damage is also introduced as a compensable head of damage according to Article 37 of the act. The President shall set a liability limit which may not be lower than the minimum level established in international agreements entered into by the Republic of Belarus,¹ and the operator must, according to Article 36(3), financially secure its liability.

A further achievement of the act concerns provisions on transparency and public participation. Individuals, public associations and other organisations shall have a right to request and obtain from state agencies and organisations information on the safety of nuclear installations and/or storage facilities, with the exception of information that is a state secret or disclosure of which is restricted. Information on a radiation accident must not be categorised as either of these exceptions (Article 39). The right of individuals and organisations to participate in decision making is provided for in Article 40 of the act.

The act stipulates that the provisions of international agreements entered into by Belarus shall prevail should they be in conflict with the provisions of this act (Article 42).

France

General legislation

Radioactive waste management

Safety guideline on final disposal of radioactive waste in a deep geological repository (2008)

This guideline, drafted by the Nuclear Safety Authority (Autorité de Sûreté Nucléaire – ASN) aims to define the objectives of radioactive waste disposal in a deep geological repository, including both site investigation and facility conception phases, in order to ensure safety after closure of the storage facility.

In particular it addresses the following aspects:

- Human health and protection of the environment.
- Principles of safety and the safety-related foundations of the storage facility construction.
- Method to demonstrate the safety of the storage.

The guideline repeals and replaces the fundamental safety rule (Règle fondamentale de sûreté – RFS, III.2.f) published in 1991, which was instrumental in the examination of the applications submitted in 2005 by the National Radioactive Waste Management Agency (Agence nationale pour la gestion des déchets radioactifs – ANDRA) concerning the feasibility of geological disposal.

1. Belarus is party to the 1963 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Protocol to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage. According to Article 7(1)(a) of the revised Vienna Convention the liability of the operator may be limited to not less than SDR 300 million.

Decree concerning the procedures applicable to foreign spent nuclear fuel and radioactive waste reprocessing (2008)

Decree No. 2008-209 was issued on 3 March 2008 in application of the Planning Act Concerning the Sustainable Management of Radioactive Materials and Waste, adopted on 28 June 2006 (see *Nuclear Law Bulletin* No. 77).

It provides that any person wishing to introduce spent nuclear fuel or radioactive waste on the national territory for reprocessing purposes shall submit an application to the Minister of Energy. The licence to carry out these activities necessitates an intergovernmental agreement.

The decree also contains provisions concerning:

- The establishment of a waste repartition system.
- A tracking system for spent nuclear fuel and radioactive waste.
- The annual report to be submitted by the operators of reprocessing and research facilities to the Minister of Energy.

Germany

Radiological protection (including nuclear emergency planning)

Amendment to the 1986 Act on Preventive Protection of the Public Against Radiation (2008)

The 1986 Act on Preventive Protection of the Public against Radiation (see *Nuclear Law Bulletin* Nos. 39 and 79) was recently amended,² with new provisions mainly covering the following issues:

- A new Section 10 of the act takes into account the decision of the Federal Constitutional Court of 2 March 1999 which requires that general administrative rules regulating the implementation of the act by the *Länder* (states of the federation) on behalf of the federal state may only be issued by the federal government as a whole and not by an individual minister and need the approval of the *Bundesrat* (Upper House).
- The provisions on administrative competences in Section 11 were redrafted and competence ordinances based on the old version of Section 11 were repealed.
- Section 13 establishes penal sanctions for the violation of certain directly applicable EU Ordinances.³

2. By Act to Amend the Preventive Radiation Protection Act of 8 April 2008 (*Bundesgesetzblatt* 2008 I p. 686).

3. Namely: Ordinance (Euratom) No. 3954/87 of the Council as amended, Ordinance (EEC) No. 2219/89 of the Council and Ordinance (EEC) No. 737/90 of the Council as amended.

Transport of radioactive material

Order on the International Carriage of Dangerous Goods by Rail (2008)

Based on the 13th RID Ordinance of 17 October 2006 (see *Nuclear Law Bulletin* No. 79), the Federal Minister for Transport, Building and Urban Affairs published a consolidated version of the Order of the International Carriage of Dangerous Goods by Rail (RID) on 16 May 2008.⁴ The text comprises the RID-versions from 1993 to 2006 and is applicable as of 1 January 2007.

Third party liability

Act on the 2004 Protocols to Amend the Paris Convention and the Brussels Supplementary Convention; Act to Amend the Atomic Energy Act (2008)

On 29 August 2008, Parliament agreed to the Protocols of 12 February 2004 to Amend the Paris Convention and the Brussels Supplementary Convention on Nuclear Third Party Liability, thus authorising the ratification of the protocols.⁵ Germany will deposit its instruments of ratification together with the other signatories to the protocols that are EU member states.⁶

On that same date, Parliament also passed an Act to Amend the Nuclear Liability Provisions of the Atomic Energy Act and to Amend Other Provisions.⁷ This act implements the provisions of the 2004 Revision Protocols by amending the Atomic Energy Act (see *Nuclear Law Bulletin* No. 70).

The protocols will not entail a change in the basic concepts of the nuclear liability provisions currently in force in Germany; in particular unlimited liability of the operator and the maximum amount of coverage of EUR 2.5 billion will be maintained. The same is true for Germany's applying the principle of reciprocity *vis-à-vis* other states. The geographical scope of application of the revised Paris Convention will, based on Article 2(b), be further extended to states that have in force nuclear liability legislation based on principles identical with those of the Paris Convention. The operator will, in accordance with a German reservation, still be held liable in cases covered by Article 9 of the revised Paris Convention ("damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil war, or insurrection").

The amendment introduces new definitions, including the broadened concept of nuclear damage as foreseen in the 2004 Paris Revision Protocol. It adopts the new minimum amounts of financial security for minor risk nuclear installations and for the carriage of nuclear substances. The single exclusively competent court to be established in accordance with Article 13(h) of the Paris Convention shall be the higher district court ("*Landgericht*") of the district where the nuclear incident occurred or, in the cases of Article 13(c) of the convention, where the operator liable has its principal place of business. The higher district court of Hamburg is competent if the nuclear incident occurs in the exclusive economic zone of the Federal Republic of Germany.

4. Annex to *Bundesgesetzblatt* 2008 II p. 475.

5. Act on the Paris Nuclear Liability Protocols 2004, *Bundesgesetzblatt* 2008 II p. 902.

6. According to Article 2(1) of Council Decision 2004/294/EC of 8 March 2004, EU member states "shall take the necessary steps to deposit simultaneously their instruments of ratification of the Protocol, or accession to it, with the Secretary-General of the Organisation for Economic Co-operation and Development" (see *Nuclear Law Bulletin* Nos. 73 and 80).

7. *Bundesgesetzblatt* 2008 I p. 1793.

The act furthermore contains an amendment to the Radiation Protection Ordinance (see *Nuclear Law Bulletin* No. 68) which is consequential to the adoption of the Revision Protocols, and amendments to the Act on Administrative Fees and to the Ordinance concerning Costs under the Atomic Energy Act (see *Nuclear Law Bulletin* No. 69).

With regard to the nuclear liability provisions, the act will come into force on the date of the entry into force of the 2004 Protocol to Amend the Paris Convention in accordance with its Article 20.

Hungary

General legislation

Energy Policy 2007-2020 Framework Strategy (2008)

In April 2008, Parliament approved the “Energy Policy 2007-2020” (40/2008) framework strategy which, with respect to nuclear energy, states that the Government is expected to take preliminary steps towards decisions on the commissioning of new nuclear capacities. It further provides that the Government is expected to carry out programmes to ensure the final disposal of radioactive waste.

Indonesia

Radiological protection

Regulation on licensing of uses of ionizing radiation sources and nuclear materials (2008)

This new Regulation⁸ of 11 April 2008 reflects international standards in radiological protection as set out in the IAEA Safety Series No. 115 on “International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources”. It applies to the use of ionizing radiation sources and nuclear material. According to Chapter II, radiation sources are grouped into categories A, B and C. The use of nuclear material belongs to Group A, and includes research and development, mining, manufacturing, production, storage, transfer, import and export. Chapter III sets out special licence requirements of an administrative and technical nature while Chapter IV provides for application procedures and the issuance of licences.

There are further provisions on the prevention of unlawful movement, theft and sabotage of radioactive sources or nuclear material (Chapter V), exemptions from licence conditions (Chapter VII) and requirements for prior approval when importing or exporting ionizing radiation sources and nuclear material (Chapter VIII). The final chapters (IX and X) deal with inspections and administrative sanctions.

8. Regulation No. 29 implements the Act on Nuclear Energy (see *Nuclear Law Bulletin* No. 59) and revokes Regulation No. 64 of 2000 concerning licensing of activities related to nuclear energy.

Italy

General legislation

Implementing law⁹ on urgent provisions for economic development etc. (2008)

This new law promotes the resurgence of nuclear energy in Italy. It is the first piece of nuclear legislation to come into effect since the 1987 moratorium on Italy's nuclear programme and it announces a new national energy plan with the aim of constructing new nuclear power plants.

Article 7 of the law states:

1. Within six months from the date of entry into force of this law, the Council of Ministers after a proposal by the Minister of Economic Development, will launch the "national energy strategy", which will indicate the priorities for the short and long term period as well as the measures needed to achieve, also taking into account market mechanisms, the following objectives:
 - a) diversification of energy sources and geographical areas of supply;
 - b) improvement of the competitiveness of the national energy system and infrastructure development with a view to the European internal market;
 - c) promotion of renewable energy and energy efficiency;
 - d) construction of nuclear power plants on the national territory;
 - e) promotion of research on fourth generation or on nuclear fusion;
 - f) increase of investment in research and development in the energy sector and participation in international agreements on technological co-operation;
 - g) promotion of environmental sustainability in the production and use of energy, also for the reduction of greenhouse gas emissions;
 - h) ensuring adequate levels of protection for the general public and workers.

Article 28 of the law also establishes a new agency, the National Institute for Protection and Environmental Research (ISPRA). This new body replaces the National Environmental Protection Agency (APAT), the Central Institute for Scientific Research and Technology Applied at Sea (ICRAM) and the National Institute for Wildlife (INFS). ISPRA operates under the supervision of the Minister of the Environment, Land and Sea and has no competencies in the nuclear field.

New draft legislation is being prepared by the Government in order to establish an *ad hoc* regulatory body in the nuclear field which will be responsible for all matters concerning nuclear safety.

9. Law No. 112 dated 25 June 2008 (consolidated into law by Law No. 133 of 6 August 2008) on urgent provisions for economic development, simplification, competitiveness, the stabilisation of public finance and tax equalization; Published in the *Official Gazette* No. 195, 21 August 2008 – Suppl. Ordinary No.196.

Montenegro

Environmental Protection

Law on the Environment (2008)

This new legislation¹⁰ establishes an Environmental Protection Agency (EPA) which shall assume regulatory competence in the field of ionizing radiation, amongst many others pertinent to environmental protection. The EPA shall report to the Ministry of the Environment and be financed from the state budget. According to Article 73 of the law, the EPA was to be established within 30 days of the law's entry into force, but by the end of November 2008, it was still "in the process of formation" and had not yet resumed its regulatory functions.

Legislative and regulatory framework in Montenegro

In Montenegro, there are no nuclear power plants in operation. The use of radiation sources is limited to medical and a few industrial applications. Montenegro resumed regulatory control over radiation sources in February 2003 when a Constitutional Chart was adopted, redefining the Federal Republic of Yugoslavia as a State Union of Serbia and Montenegro, *de facto* a loose confederation of the two states.

Montenegro continues to apply the radiation safety legislation of the former Federal Republic of Yugoslavia and the following instruments, amongst others, are still in force:

- Law on Protection of Ionizing Radiation.¹¹
- Decree on the records of and irradiation of the population, patients and persons exposed to ionizing radiation at work.¹²
- Decree on the systematic monitoring of the radionuclide content in the environment.¹³
- Regulation on the application of ionizing radiation sources in medicine and basic provisions.¹⁴
- Regulation setting the requirements for the marketing and use of radioactive materials, X-ray machines and other devices that generate ionizing radiation.¹⁵
- Regulation concerning the limits of exposure to ionizing radiation.¹⁶

10. *Official Gazette* of Montenegro No. 48 of 11 August 2008.

11. *Official Gazette* of the Federal Republic of Yugoslavia, No. 46 (4 October 1996).

12. *Ibid.*

13. *Ibid.*

14. *Official Gazette* of the Federal Republic of Yugoslavia, No. 32/98 (3 July 1998).

15. *Ibid.*

16. *Ibid.*

- Regulation concerning the limits of radioactive contamination of the environment and the modalities of decontamination.¹⁷
- Regulation concerning the modality of and requirements for the collection, safekeeping, recording, storing, processing and disposal of radioactive materials.¹⁸

These regulations are broadly based on the basic safety standards of the International Atomic Energy Agency and can be regarded as consistent with international standards.

An effective regulatory body has not yet been established in Montenegro and the capacity of the Ministry of Environment is currently not sufficient to carry out regulatory functions, which is why, a newly constructed and completed storage facility for low and medium radioactive waste cannot be granted an operating licence. Basic regulatory functions are carried out by the Ministry of Health as an interim regulatory body.

Romania

Organisation and structure

Decision on the organisational structure of the Nuclear Agency (2008)

This new Government Decision¹⁹ of 29 August 2008 amends a 2007 decision concerning the regulation and organisational structure of the Nuclear Agency (NA).

According to the amendment, the NA is a specialised body of the central public administration under the Ministry of Economy and Finance. It submits a quarterly report to the Prime Minister on its own activities, international developments in the nuclear field, and the implementation of technical assistance programmes developed under the IAEA, the European Union or other related international bodies and organisations.

The NA is presided over by a managing board comprised of nine members appointed by the Minister of Economy and Finance upon a proposal by the NA president. The NA activities shall be financed from the budget of the Ministry of Economy and Finance.

17. *Official Gazette* of the Federal Republic of Yugoslavia, No. 9/99 (19 February 1999).

18. *Ibid.*

19. Decision No. 923 of 29 August 2008, published in the *Official Journal*, Part I No. 628 of 29 August 2008 amending Governmental Decision No. 267/2007.

Regime of nuclear installations

Decision on the selection of the investors of Units 3 and 4 of Cernavoda NPP (2008)

Governmental Decision²⁰ of 24 June 2008 amends and completes the Annex to Governmental Decision No. 643/2007 concerning the strategy for selecting investors to finalise Units 3 and 4 of the Cernavoda nuclear power plant.

Under the new decision, Units 3 and 4 of the Cernavoda NPP shall be financed by a company to be established, 51% of the shares of which will be held by Societatea Nationala Nuclearelectrica S.A. (SNN–S.A.). The state shall increase the capital of SNN–S.A. through funds from the National Development Fund and it shall grant, if necessary, state guaranteed loans, under the terms of the law.

The heavy water inventory and the first load of nuclear fuel shall be provided by the state. According to the decision, the state has no obligation to purchase the electricity produced. The company shall have the status of a legal person subject to private law.

Radiological protection (including nuclear emergency planning)

Consolidated version of the Civil Protection Law (2008)

The Civil Protection Law²¹ of 2004, as amended in 2008, stipulates that civil protection is a component of national security that aims to prevent and reduce the risk of disasters, and to protect the public, property and the environment from the negative effects of emergency situations and from armed conflicts.

Section 4 of the amended law deals with radiological, chemical and biological protection in the event of an emergency. Public institutions and operators that manufacture, transport, store or handle hazardous substances in such quantities that may endanger the life and health of the public must check for radioactive, chemical and biological contamination of raw materials and products, and where necessary decontaminate their personnel, lands, buildings and machinery. The decontamination is to be performed according to technical regulations established by the respective ministries and approved by the General Inspectorate for Emergency Situations. Pollution control consists of specific measures for the identification and removal of polluting sources, and includes evacuation and agricultural and consumption prohibitions. Operators and public authorities must warn the population immediately of any pollution or contamination around a particular facility and take action to protect the population and mitigate adverse effects.

National strategy for preventing emergency situations (2008)

Governmental Decision of 16 July 2008²² approves the national strategy for preventing emergency situations caused by technological risks, including nuclear accidents and radiological emergencies.

20. Decision No. 691 of 24 June 2008, published in the *Official Journal*, Part I No. 594 of 7 August 2008, amending and completing Annex to Governmental Decision No. 643/2007.

21. Civil Protection Law No. 481 of 8 November 2004; a consolidated version of the law with all amendments since 2004 was published in the *Official Journal*, Part I No. 554 of 22 July 2008.

22. No. 762, published in *Official Journal*, Part I No. 556 of 28 July 2008.

According to this strategy, the prevention of nuclear accidents and radiological emergencies consists of identifying and monitoring the potential sources that may cause such emergencies, the evaluation of information, the analysis of early situations, forecasting, and establishing the best methods to mitigate the effects of ionizing radiation.

The objectives of the strategy are as follows:

- Ensuring nuclear safety, public health and environmental protection, safe management of radioactive materials, physical protection.
- Maintaining and improving capability to take action in the event of an emergency, Establishing and maintaining an open, transparent and reliable relationship with the media.
- Implementing Council Decision 87/600/EURATOM on arrangements for the early exchange of information in the event of a radiological emergency and the Agreement between EURATOM and EU non-member states concerning their participation in such arrangements (see *Nuclear Law Bulletin* No. 72).

According to this decision, public authorities and operators are obliged to monitor the radioactivity of the environment, establish forecasts and predictions regarding radioactive contamination of the environment, agricultural products and the population in potentially contaminated areas, notify authorities of an accident, establish protection and action plans in the event of a nuclear accident/radiological emergency and perform emergency exercises on and off site.

National strategy for information sharing and communication in the event of an emergency (2008)

The national strategy for information sharing and communication in the event of an emergency²³ calls for a national campaign of public education and information in the event of a radiological emergency. The Ministry of Interior and Administrative Reform established the strategy under which radioactive substances are included in the category of technological risks, as events involving releases of such substances are dangerous for humans and the environment.

Romania owns one CANDU type nuclear power plant at Cernavoda which poses a low risk of nuclear accidents, but the nuclear power plant in Kozloduy, Bulgaria is seen as a major risk. To date, Romania has only been affected by the Chernobyl accident, primarily in the north-eastern part of the country, where an increased rate of thyroid cancer amongst adults and children born with malformations have been recorded.

Russian Federation

Organisation and structure

Decree transferring responsibilities to the Ministry of Natural Resources and Ecology (2008)

According to this decree of 29 May 2008,²⁴ responsibility for nuclear safety and radiological protection was transferred to the Ministry of Natural Resources and Ecology (MNRE), the federal

23. *Official Journal*, Part I No. 426 of 6 June 2008.

24. Decree No. 724 on the system and structure of the Federal Executive Authorities.

authority responsible for policy development and legal regulations in the field of nuclear safety. The Federal Environmental, Industrial and Nuclear Supervision Service (Rostechнадзор) is also now placed under the authority of the MNRE.

An earlier decree of 12 May 2008 had approved a new structure of federal executive authorities. Amongst other changes, the Ministry of Natural Resources was reorganised to the Ministry of Natural Resources and Ecology, and federal ministers have the right to give necessary instructions to the heads of subordinated federal services and federal agencies.

Slovak Republic

Environmental Protection

Transposition of Council Directive 2006/117/Euratom (2008)

An Amendment to the Atomic Act, concerning the transposition of Council Directive 2006/117/Euratom on the supervision and control of shipments of radioactive waste and spent fuel was approved by the National Council of the Slovak Republic (Parliament) on 18 September 2008 and will enter into force on 25 December 2008.²⁵

Before submission to Parliament, the European Commission had been notified of the draft amendment pursuant to Article 33(3) of the Euratom Treaty as well as pursuant to Directive 98/34/EC. Until 30 April 2008, a three-month period of “preparatory works interruption” was applied during which the European Commission was expected to provide its opinion on the proposal. Other member states were also allowed to submit comments, but neither the Commission nor other member states raised any objections to the draft.

In parallel to this process, preparatory work on a completely new Atomic Act was in progress during 2007 and 2008. The new law is expected to enter into force on 1 January 2010, *inter alia*, to meet the deadline set in the action plan of the Western European Nuclear Regulators Association (WENRA) to implement reference levels by the end of 2010.

Ukraine

Organisation and structure

Decree creating the state enterprise “Nuclear Fuel” (2008)

By Government Decree dated 10 September 2008,²⁶ the Ministry of Energy was entrusted with the task of establishing the state enterprise “Nuclear Fuel”, following the liquidation of the state-run enterprise UkrAtomProm.²⁷

25. The act was published on 25 October 2008 as Act No. 408/2008 on amendments to and modifications of the Act No. 541/2004 Coll. (Atomic Act).

26. Decision No. 841 of the Cabinet of Ministers.

27. Liquidated by Decree of 17 April 2008, No. 650.

By that same decree, the statute of “Nuclear Fuel” was adopted according to which it will operate under the supervision of the Minister of Energy. With respect to its legal status, this new enterprise is stipulated to be a legal entity with separate property, independent accounts, and the right to contract for commodities and services.

Order No. 1328 of 16 October 2008, appoints *Petro Shvydko* as Director General of Nuclear Fuel.

Radioactive Waste Management

Amendment to the law on radioactive waste management (2008)

On 21 May 2008, Verkhovna Rada, the Parliament of Ukraine, amended its laws on radioactive waste management (see *Nuclear Law Bulletin* Nos. 55 and 58).

According to the amended legislation, the Cabinet of Ministers is to establish a state policy, create regulatory authorities and develop government programmes in the field of radioactive waste management. The law also imposes increased responsibilities on all organisations and companies that generate radioactive waste. The law on environmental protection was also modified to better implement the “polluter pays” principle and to provide for financial means of managing radioactive waste; in particular, waste producers will contribute to a fund dedicated to cover all expenses related to radioactive waste management including the selection and construction of a site. The fund is to be an integral part of the state budget.

United Kingdom

Organisation and structure

New Ministry of Energy and Climate Change (2008)

A new Department of Energy and Climate Change was created in the United Kingdom on 3 October 2008. Ed Miliband is the Secretary of State of the Department, who assumes responsibility for areas previously housed within two departments - the Department for Environment, Food and Rural Affairs (DEFRA) and the Department of Business, Enterprise and Regulatory Reform (BERR). The new department is expected to provide more direction and focus to the pressing issues of both security of energy supply and climate change.

A central task of the department will be “delivering a low carbon economy and ensuring secure and affordable energy supply”. The area of low-carbon supply is split between “renewable energy, carbon capture and storage” and “nuclear strategy and delivery, including radioactive waste and international non-proliferation”.

United States

Regime of nuclear installations

Next generation nuclear plant licensing strategy (2008)

On 13 August 2008, the Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) transmitted to Congress a joint report, setting forth a licensing strategy for the next generation nuclear plant (NGNP). The report was mandated by the Energy Policy Act of 2005 (EPA). The NGNP is envisioned as a very high temperature gas reactor (VHTR) designed to produce high temperature process heat for the production of hydrogen and other industrial uses.

The EPA establishes an NGNP target date of 30 September 2021 to complete construction and begin operations of prototype nuclear reaction and associated process heat or hydrogen facilities. Alternatively, Congress will accept a report by 30 September 2021 establishing an alternate date for completion.²⁸

The Secretary of Energy and the Commission have adopted the following licensing strategy, which they believe provides the best opportunity for meeting the 2021 deadline for initial operation of a prototype NGNP.

- (1) The applicant for the NGNP prototype licence should submit a combined licence (COL) application under Subpart C, “Combined Licenses”, 10 C.F.R. Part 52 of the Code of Federal Regulations.²⁹
- (2) The best approach to establish the licensing and safety basis for the NGNP is the development of a risk-informed and performance-based technical approach adapting existing NRC LWR technical licensing requirements.
- (3) Research and development (R&D) must address VHTR safety-relevant phenomena and perform confirmatory analysis. To the extent possible and appropriate, the NRC will participate in R&D programmes and use the information to develop independent confirmatory analysis capability. The NRC will also use experimental data which the applicant submits as part of the licence submission as well as data available in open literature.
- (4) The working group expects various areas to require regulatory infrastructure development, including regulatory guides, standard review plans, codes and standards, reactor oversight process development and inspection programmes. The guidance documents should address NGNP-specific issues involving security and safeguards, spent fuel, environmental matters as well as inspection and start-up testing.
- (5) If other issues relating to the NGNP design and the application are identified in the future, the NRC will need to engage with the applicant during the pre-application stage to address them.

28. 42 U.S.C. §16025(c).

29. For further information on the COL, see article by Stephen G. Burns, “Looking Backward, Moving Forward: Licensing New Reactors in the United States”, *Nuclear Law Bulletin* No. 81.

- (6) The NRC estimates that it will take five years to develop necessary regulatory infrastructure for a confirmatory safety analysis and licence review and four to five years to conduct the licensing review. To meet the timing goals for NGNP set forth in § 644(b) of the EPA, the NRC staff and the NGNP applicant will have to engage in a 3-year pre-application review starting in 2010, followed by an aggressive 4-year licence application review starting in 2013.

Radioactive waste management

Public health and environmental radiation protection standards for Yucca Mountain, Nevada (2008)

On 15 October 2008, the U.S Environmental Protection Agency (EPA) published amendments to the public health and safety standards for radioactive material stored or disposed of in the potential repository at Yucca Mountain, Nevada.³⁰ These standards came into effect on 14 November 2008.

On 3 June 2008, the U.S. Department of Energy (DOE) submitted a licence application to the U.S. Nuclear Regulatory Commission (NRC) for the construction of a repository for spent nuclear fuel, high-level radioactive waste and other radioactive waste (collectively “radioactive waste”) at Yucca Mountain.

EPA first established generic standards for the management, storage and disposal of radioactive waste on 19 September 1985.³¹ On 20 December 1993, the EPA issued amended disposal standards in response to the U.S. Court of Appeals for the First Circuit’s judicial remand of the initial disposal standards.³² Section 801(a) of the Energy Policy Act of 1992 (EnPA) directed EPA to develop standards specifically applicable to releases from radioactive material stored or disposed of at a radioactive waste repository at Yucca Mountain.³³ The EnPA directed EPA to contract with the National Academy of Sciences (NAS) to conduct a study and make recommendations to EPA on reasonable radiation protection standards for Yucca Mountain. EPA’s standards were to be based on and consistent with the NAS recommendations unless policy considerations justified different standards.

On 13 June 2001, EPA issued final standards for the Yucca Mountain site.³⁴ As directed in the EnPA, these particular standards were tailored to the specific Yucca Mountain site. The 2001 standards included the following:

- (1) A standard to protect the public during management and storage operations on the Yucca Mountain site.

30. Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada, 73 Fed. Reg. 61256 (15 October 2008).

31. Environmental Standards for the Management and Disposal of Spent Nuclear Fuel; High-Level and Transuranic Radioactive Wastes, 50 Fed. Reg. 38066 (19 September 1985).

32. Environmental Radiation Protection Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes, 58 Fed. Reg. 66398 (20 December 1993).

33. 42 U.S.C. § 10141 n.

34. Public Health and Environmental Radiation Protection Standards for Yucca Mountain, NV, 66 Fed. Reg. 32074 (13 June 2001).

- (2) An individual-protection standard to protect the public from releases from the undisturbed disposal system.
- (3) A human-intrusion standard to protect the public after disposal from releases caused by a drilling penetration into the repository.
- (4) A set of standards to protect ground water from radionuclide contamination caused by releases from the disposal system.
- (5) The requirement that compliance with the disposal standards be shown for 10 000 years.
- (6) The requirement that DOE continue its projections for the individual-protection and human-intrusion standards beyond 10 000 years to the time of peak (maximum) dose and place those projections in the Environmental Impact Statement (EIS) for Yucca Mountain.
- (7) The concept of the reasonably maximally exposed individual (RMEI) defined as a hypothetical person whose lifestyle is representative of the local population living today in the Town of Amargosa Valley, is the individual against whom the disposal standards should be assessed.
- (8) The concept of a “controlled area”, defined as an area immediately surrounding the repository whose geology is considered part of the natural barrier component of the overall disposal system and inside of which radioactive releases are not regulated.³⁵

The Nuclear Energy Institute (NEI), the State of Nevada and the Natural Resources Defense Council (NRDC) challenged in the U.S. Court of Appeals for the District of Columbia the standards promulgated in 2001. On 9 July 2004, the court dismissed all of the challenges except for that relating to the EPA’s 10 000 year compliance period.³⁶ The court found that EPA’s decision to apply compliance standards only to the first 10 000 years following disposal was not “based upon and consistent with” the NAS Report. It also ruled that EPA’s decision on the compliance period was not justified on policy grounds. The court therefore vacated the standards found in 40 C.F.R Part 197 “to the extent that [they] incorporate[d] a 10 000 year compliance period”.³⁷

The final rule published in the *Federal Register* on 15 October 2008 responds to the court’s ruling. It establishes the dose standards for a period from 10 000 years through one million years following disposal of waste. The rule provides that the dose standard for the period beyond 10 000 years is 1 mSv/yr (100 mrem/yr), consistent with NAS recommendations to assess the peak dose. EPA does not amend its standard up to 10 000 years after disposal. That standard remains 15 mrem/yr. EPA notes that 15 mrem/year, the standard for the period up to 10 000 years after disposal, was neither challenged nor ruled on in the Court of Appeals for the District of Columbia.

35. Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada, 73 Fed. Reg. at 61259.

36. Nuclear Energy Institute v Environmental Protection Agency, 373 F.3d 1251 (D.C. Cir. 2004).

37. *Ibid* at 1315.

Third party liability

Inflation adjustment to the Price-Anderson Act (2008)

On 29 September 2008, the U.S. Nuclear Regulatory Commission adjusted for inflation the retrospective premium applicable to nuclear power plant operators under the U.S. Price-Anderson Act. The nuclear liability limit now totals USD 11 937 600 000.³⁸

The Atomic Energy Act requires the NRC to adjust the maximum total and annual standard deferred premiums specified in the Price-Anderson Act for inflation at least once during each 5-year period following 20 August 2003.

The adjustment increases the nuclear liability limit for nuclear power plants from about USD 10.3 billion to about USD 11.9 billion, effective 29 October 2008. This sum is based on the first tier of USD 300 million of insurance from American Nuclear Insurers, plus the retrospective premiums comprising the multiple of the number of power reactors licensed to operate at the time of the nuclear incident. This retrospective premium is now at USD 111.9 million per reactor per incident (with 104 operating nuclear power plants). An additional 5 percent may be assessed for claims expenses.

The *annual* retrospective payment per nuclear power plant has been increased from USD 15 million to USD 17.5 million. This represents an increase of about 16.7 percent over the figure set five years ago.

Commercial power reactors rated at less than 100 000 kw(e) and transport activities are regulated under a different scheme. The maximum government indemnity for these small reactors is USD 500 million, and there is a minimum required payout from insurance of USD 60 million which brings the total liability to USD 560 million.

38. Inflation Adjustment to the Price-Anderson Financial Protection Regulations, 73 Fed. Reg. 56451 (29 September 2008).