**EXPLANATORY MEMORANDUM TO**

**THE JUSTIFICATION DECISION (GENERATION OF ELECTRICITY BY THE UK ABWR NUCLEAR REACTOR) REGULATIONS 2015**

**2015 No. 209**

**1.** This explanatory memorandum has been prepared by the Department of Energy and Climate Change and is laid before Parliament by Command of Her Majesty.

This memorandum contains information for the Joint Committee on Statutory Instruments.

## 2. Purpose of the instrument

2.1 This instrument makes a positive regulatory justification decision in respect of the generation of electricity by the nuclear reactor known as the UK ABWR (Advanced Boiling Water Reactor). Regulatory justification requires a decision about whether the social, economic and other benefits of a practice outweigh the health detriments and must be completed before any new practice giving rise to ionising radiation can be undertaken. These Regulations do not, themselves, allow for deployment of this nuclear reactor, but are an early step in the process of building the UK ABWR nuclear reactor in the UK.

## 3. Matters of special interest to the Joint Committee on Statutory Instruments

3.1 None.

## 4. Legislative Context

4.1 Council Directive 96/29/Euratom (OJ No L159, 29.6.96, p 1) laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation requires Member States to carry out a practice called "Justification". This requires that before a new practice involving ionising radiation is first adopted or approved Member States must make a decision on whether the health detriments are Justified by the social, economic and other benefits. This requirement is implemented in respect of the whole of the UK by the Justification of Practices Involving Ionising Radiation Regulations 2004 (SI 2004 No. 1769) ("the 2004 Regulations"). . The Directive has been revised by a recast Directive (2013/59/Euratom OJ No L13, 17.01.14, p1) which comes into force on 6 February 2018. The recast Directive does not change the requirement for all new classes and types of practice to be justified before being adopted.

4.2 Regulation 14(1) of the 2004 Regulations requires that any positive justification decision should itself be made through Regulations. The Regulations which are the subject of this explanatory memorandum are being made to fulfil this requirement and make a positive decision that a type of nuclear reactor (the UK ABWR) is justified. No transposition note is attached as although the requirement to make these decisions originates in the Directive, the 2004 Regulations transpose the substantive requirements and it is those Regulations that require decisions to be made through these Regulations.

4.3 In accordance with the regulation 12 of the 2004 Regulations the Secretary of State has previously determined that the UK ABWR reactor is a "new practice".[1]

## 5. Territorial Extent and Application

5.1 This instrument applies to all of the United Kingdom.

5.2 The devolved administrations have been consulted at regular stages throughout the consideration of the justification application and decision-making process.

## 6. European Convention on Human Rights

The Secretary of State for Energy and Climate Change, Edward Davey MP, has made the following statement regarding Human Rights:

In my view the provisions of The Justification Decision (Generation of Electricity by the UK ABWR Nuclear Reactor) Regulations 2015 are compatible with the Convention rights.

## 7. Policy background

7.1 In December 2013 the Nuclear Industry Association submitted an application to the Secretary of State asking him to justify the generation of electricity from the UK ABWR nuclear reactor. The Secretary of State subsequently determined that the UK ABWR was a new class or type of practice, within the meaning of the 2004 Regulations and therefore required justification.[2]

7.2 The UK ABWR is a nuclear reactor technology designed by Hitachi-GE Nuclear Energy Ltd for building in the UK. It is a development of the ABWR, a reactor technology which has already been in operation in Japan. It is a boiling water reactor (BWR), a different category of nuclear reactor technology from the pressurised water reactor (PWR), two examples of which, the EPR (European

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1 This determination is at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335499/abwr_justification_consultation_volume_2_decision_document.pdf

2 See footnote 1.

Pressurised Reactor) and the AP1000, were the subject of previous Justification decisions approved by Parliament in 2010.

7.3 All PWRs and BWRs are thermal reactors using light water ($H_2O$, or water as generally understood) as a coolant and moderator. The main difference is that PWRs have a primary cooling circuit which carries water through the core of the reactor under high pressure so that it cannot boil. Heat is then transferred to a secondary circuit in which steam is generated to drive the turbine. BWRs such as the UK ABWR are similar to PWRs, but there is only one circuit. The coolant turns to steam, which drives the turbines, and the turbines are part of the reactor circuit.

7.4 Following two consultations (detailed further below) the Secretary of State has concluded that the generation of electricity by the UK ABWR nuclear reactor is justified. Alongside these Regulations he is also publishing documents considering the benefits and detriments of these reactors and setting out in detail why he considers that they are justified.

7.5 These Regulations include specific exceptions making it clear that although the practices are justified, the justification decisions do not extend to the use of mixed oxide fuel in the reactors or the reprocessing of spent fuel. This is because as part of the consideration of the practices the Secretary of State has not looked at particular issues arising from the creation, use and disposal of mixed oxide fuel or the radiological processes or consequences associated with reprocessing.

## 8. Consultation outcome

8.1 The instruments follow two full public consultations. Those consulted included industry, environmental groups, regulators and other Government bodies, local campaign groups and individual members of the public.

8.2 The Government consulted between February and May 2014 on the application from the Nuclear Industry Association referred to in paragraph 7.1.

8.3 The Government received 66 responses to the consultation. Some responses supported the position taken in the Application. Others argued that reduction in carbon emissions could be better achieved through other forms of energy, questioned nuclear's value as a secure source of supply and argued that the risk of detriment to health from nuclear power stations and from the waste they produce meant that new nuclear power stations should not be built.

8.4 The Government then consulted between July and October 2014 on a proposed decision that the nuclear reactor UK ABWR should be justified.

8.5 The Government received 13 responses to the second consultation. Of these twelve (from industry and statutory consultees), were supportive of the proposed decision.

The other expressed opposition to new nuclear on general grounds but did not present particular reasons for not Justifying the UK ABWR.

8.6 The Government has not been presented with any evidence in response to either of the consultations which has caused it to question that the reactor should be justified, that is, that its benefits outweigh any health detriment it might cause.

8.7 Documents setting out in detail why the Secretary of State considers that these reactor types are justified and responding to points made in response to the consultations are published on the Department's website at https://www.gov.uk/guidance-for-operators-of-new-nuclear-power-stations. Copies have been deposited in the Libraries of both Houses.

## 9. Guidance

9.1 Guidance was published by Defra (updated in May 2008) on the application of the 2004 Regulations. This sets out the Regulatory Justification regime and also provides guidance on the effect of a positive decision, such as those set out in these Regulations. It is not intended that any guidance relating specifically to the Regulations which are the subject of this explanatory memorandum will be published.

## 10. Impact

10.1 The impact on business, charities or voluntary bodies is that the decision will allow further development of the process of deploying the UK ABWR nuclear reactor in the UK, but does not of itself allow for its deployment.

10.2 There is no impact on the public sector.

10.3 As no regulatory impact on the private or voluntary sector from implementing these regulations is foreseen, an Impact Assessment has not been prepared for this instrument.

## 11. Regulating small business

11.1 The legislation applies to small business. However, in practice no small business will be responsible for constructing or operating a UK ABWR nuclear power station.

11.2 No action is therefore necessary to minimise the impact of the requirements on or otherwise assist firms employing up to 20 people.

## 12. Monitoring & review

12.1 The decisions are among the actions necessary to allow new nuclear power stations to come into operation. Progress towards this objective is regularly reviewed by Government and industry.

## 13. Contact

Owen Jenkins at the Department of Energy and Climate Change Tel: 0300 068 5869 or email: owen.jenkins@decc.gsi.gov.uk can answer any queries regarding the instrument.