

ABWR Regulatory Justification Application
Department of Energy and Climate Change
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**The Justification of Practices Involving Ionising Radiation Regulations 2004:
Consultation on the Nuclear Industry Association's Application to Justify the
Advanced Boiling Water Reactor (ABWR) Volume 1 – Consultation Document**

EDF Energy generates electricity using nuclear, coal, gas and renewable energy, and is a major supplier of electricity and gas to customers in the UK, with over five million customer accounts. EDF Energy operates eight nuclear power stations in England and Scotland, seven of which use Advanced Gas-Cooled Reactor (AGR) technology and one of which is a Pressurised Water Reactor (PWR).

EDF Energy is proposing to build four EPR (pressurised water) reactors in the UK. The regulatory justification for this technology was concluded in October 2010. The regulatory justification of a different pressurised water reactor design, the AP1000, was also decided at the same time.

Given the precedents set in the Secretary of State's earlier consideration of the pressurised water reactor designs, we believe the ABWR should be considered as a new class or type of practice. The proposed ABWR design is already deployed in Japan, with four units operational (although currently shutdown) and two under construction. In our view, the ABWR reactor technology is a suitable class or type of practice for a decision under the Justification of Practices Involving Ionising Radiation Regulations 2004. The practice is well-defined and significantly different from the EPR and AP1000 pressurised water reactor designs that have been previously considered by the Secretary of State.

Our detailed responses are set out in the attachment to this letter. Should you wish to discuss any of the issues raised in our response or have any queries, please contact Nigel Knee on 020 3219 6640, or myself.

I confirm that this letter and its attachment may be published on DECC's website.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Angela Pearce".

Angela Pearce
Corporate Policy and Regulation Director

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Attachment

The Justification of Practices Involving Ionising Radiation Regulations 2004: Consultation on the Nuclear Industry Association's Application to Justify the Advanced Boiling Water Reactor (ABWR) Volume 1 – Consultation Document

EDF Energy's response to your questions

Q1. Do you agree with the Government's preliminary view that the class or type of practice set out in the application submitted by the Nuclear Industry Association:

- (a) qualifies as a new class or type of practice; and**
- (b) is a suitable class or type of practice for a decision by the Secretary of State? If not, why not?**

Given the precedents set in the Secretary of State's earlier consideration of the pressurised water reactor designs, it is clear that the ABWR should be considered as a new class or type of practice. There are currently no Boiling Water Reactors (BWR) operating in the UK, although there are 81 reactors of this type operating elsewhere in the world¹. The proposed ABWR design is already deployed in Japan, with four units operational (although currently shutdown) and two under construction.

In our view, the ABWR reactor technology is a suitable class or type of practice for a decision under the Justification of Practices Involving Ionising Radiation Regulations 2004. The practice is well-defined and significantly different from the EPR and AP1000 pressurised water reactor designs that have been previously considered by the Secretary of State.

Q2. Does the application contain sufficient information to enable the Justifying Authority to make an assessment of the class or type of practice in the application? If not, what further evidence is needed?

The design is established and well-defined, and the potential health detriments as a result of exposure to ionising radiation can be quantified based on experience with other BWRs in operation around the world, and with the ABWR itself which is operational in Japan.

The benefits of the practice, as described in the application, are that, like other nuclear power stations, it would be able to make a significant contribution to security of electricity supply at an affordable price in the UK; and would increase the amount of low-carbon electricity generation available.

In our view, the application contains sufficient evidence to allow a determination that the benefits outweigh any potential health detriments from the practice described.

¹ IAEA PRIS database, <http://www.iaea.org/PRIS/WorldStatistics/OperationalReactorsByType.aspx> (accessed 28/4/2014)

Q3. Do you have any comments on the arguments or evidence in the NIA's application? Are there any additional arguments or evidence which the Justifying Authority should consider?

The arguments presented follow the precedent set in the earlier NIA application for the EPR, and these are equally valid for the ABWR. In general, exposure to ionising radiation for power station workers at BWRs has been higher than for PWRs. However, for both types of reactor, the levels of exposure during normal operation are well within the recommended limits set by the International Commission on Radiological Protection (ICRP), and experience with the ABWR design in Japan has shown that it can be operated with lower total exposures than for typical PWRs in Japan (see Figure A1.5 of the NIA Application).

Q4. Do you have any other comments on the Secretary of State's preliminary view of the class or type of practice, on the approach of the NIA, or any other options?

EDF Energy agrees with the Secretary of State's preliminary view set out in Chapter 2 of the consultation, and recommends that the next stage of the regulatory justification process can be undertaken based on the evidence already provided by the Applicant, with public consultation on a draft decision.

Q5. As part of the further consultation on the draft decision document, the Secretary of State proposes to run public engagement events. Do you have any suggestions about the format of such events?

It is important that decisions on regulatory justification are taken following effective public consultation, allowing those that may be affected by the decision to have their say, and for any new evidence to be provided and considered by the Secretary of State in reaching a final decision.

The ready availability of access to the internet in the UK, and the ease with which documents can be made available means that the majority of the public consultation should be carried out on-line. This could include interactive events and would be the most effective way to reach the largest number of people given the resources available, and allow public participation in the decision process. It should not be necessary for an extensive programme of public events to be held.

**EDF Energy
May 2014**