

**HORIZON**

NUCLEAR POWER

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Response to  
The Justification of Practices Involving Ionising Radiation  
Regulations 2004  
Consultation on the Nuclear Industry Association's  
Application to Justify the UK Advanced Boiling Water  
Reactor (UK-ABWR)

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## **Introduction**

### **Horizon Nuclear Power**

Horizon is a UK energy company developing a new generation of nuclear power stations. The company was established in 2009 following the Government's announcement that new nuclear energy would be a core element in its policy to meet the UK's future carbon emission reduction and security of supply goals. The company was acquired by Hitachi in late 2012.

Horizon owns two of the eight sites designated for new build in the National Policy Statement for nuclear power generation. Horizon plans to provide at least 5,400MW of new power station capacity to the UK, with the first project to be located at Wylfa on the island of Anglesey in North Wales. Horizon plans to deliver two Hitachi-GE UK Advanced Boiling Water reactors (UK ABWR) at its Wylfa Newydd site, each generating around 1,350MW.

Horizon anticipates construction of Wylfa Newydd beginning around 2019, with the first unit to be operational in the first half of the 2020s. No decisions have yet been made about the timing of construction of further units beyond Wylfa, but the first project is likely to form the basic template for a further project at Horizon's Oldbury site in South Gloucestershire, which would follow construction of the Wylfa plant. Up to 60% of the total value of the project is expected to go to the UK supply chain and the project will see a peak construction workforce of around 6,000 and 800-1,000 during the subsequent operational phase.

The Nuclear Industry Association made the application with the active support of Horizon.

## **Specific Responses**

- 1. 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?**

- a. Horizon agrees with the Government's preliminary view that the class or type of practice defined in the NIA application as "The generation of electricity from nuclear energy using oxide fuel of low enrichment in fissile content in a light water cooled, light water moderated thermal reactor currently known as the UK ABWR designed by Hitachi-GE Nuclear Energy, Ltd." qualifies as a new class or type of practice under the Justification of Practices Involving Ionising Radiation Regulations 2004 requiring a decision by the Secretary of State under those regulations. This is a consistent position with the earlier decisions made by the Secretary of State with respect to AP1000 and EPR.

- 2. 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?**

- b. Horizon believes that the application contains sufficient information to enable the Justifying Authority to make an assessment. Horizon notes that the UK ABWR

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application contains similar information to the successful application that was made in 2008 for the EPR and AP1000.

- c. Additionally the arguments in the application have been updated to take into account new information and events since the 2010 Justification decisions were made, to ensure that the application provides a comprehensive consideration of the benefits and potential detriments of the UK ABWR. These changes include: a more detailed consideration of the causes and effects of severe accidents and extreme events including the 2011 incident at Fukushima as well as an explanation of the substantial provisions that ensure that a high level of safety will be maintained by nuclear operators, regulatory developments such as the proposed introduction of electricity market reforms, updated costs estimates as well as the provision of UK ABWR specific information..

**3. *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?***

- d. Horizon's view is that the arguments and evidence presented in the NIA's application are both highly comprehensive and robust.
- e. The application identifies two major benefits from deployment of the UK ABWR: security of supply and climate change. The application considers a wide range of potential detriments and demonstrates that even when these are taken into account, the UK ABWR would still result in a major net benefit.
- f. The application explains how the UK ABWR could provide a significant benefit to the UK from a security of supply perspective considering the availability of nuclear fuel and the reliability that can be expected from the UK ABWR technology. The application explains that the UK ABWR is capable of matching US and European performance benchmarks and Horizon would fully expect that, taking into account operational experience and the UK's specific regulatory regime and operating environment, that similar performance could be achieved in the UK. Horizon concurs with the application's conclusion that the UK ABWR is able to provide secure, large scale, baseload electricity as part of a diverse energy mix in the UK.
- g. The application explains that the UK ABWR is a proven, reliable and low carbon generating technology that will make a significant contribution to avoiding the harmful emissions which cause climate change.
- h. Horizon agrees with the application's conclusion that the UK ABWR is expected to be a cost competitive form of low carbon generation contributing to the UK's security of supply and therefore is likely to be beneficial for the UK economy.
- i. The application provides consideration of the potential radiological health detriments at each stage of the fuel cycle and during the life of the UK ABWR, from mining through operation and final disposal of waste. It demonstrates that all applicable legal dose limits and regulatory constraints are capable of being met. The application further presents evidence to show that radiation exposures can expect to be lowered below the legal limits (in some cases substantially) during the optimisation process that will occur during the site specific licensing

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and permitting stages, which would be carried out by Horizon. The annual radiation dose to the most affected member of the public will be very low being of the same order as a return air flight between London and New York.

- j. The application includes a comprehensive review of other potential detriments that might result from deployment of the UK ABWR. The review encompasses a wide range of considerations including radioactive waste and decommissioning, environmental impacts, proliferation risks, security, industrial safety climate change impacts and the risks of extreme events and severe accidents. The application also outlines the provisions that give a high degree of confidence that detriments will be managed and limited as it describes, including a robust goal setting regulatory regime that places the onus on operators to demonstrate to the regulators high levels of safety and environmental protection.

**4. *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?***

- k. Horizon has no further comment to make. Horizon supports the approach of the NIA, which is consistent with its previous application and incorporates a similar level of detail.

**5. *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?***

- l. The process proposed is highly transparent with sufficient time for consultation and comment on both the application and the Justifying Authority's draft decision. Horizon notes the Secretary of State's proposal to run public engagement events as part of the further consultation on the draft decision document. As a potential operator of the UK ABWR, Horizon would be willing to support and make presentations at any public engagement events should DECC deem this input helpful.

***Further comments and evidence***

- m. We have no further comments.

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