

## Nuclear Institute Response to ABWR Consultation

	CONSULTATION QUESTIONS	RESPONSE
1.	<p>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:</p> <p>(a) qualifies as a new class or type of practice; and</p> <p>(b) is a suitable class or type of practice for a decision by the Secretary of State?</p> <p>If not, why not?</p>	<p>(a) YES</p> <p>(b) YES</p> <p>Nowhere is it defined what constitutes a new class or type of practice but that all new reactor designs are being treated as such and in this context, it is appropriate that the ABWR be assessed.</p> <p>The reference provided does not point to a single document which describes clearly that the approach of assessing new reactor designs as new types or practices has been agreed by the Secretary of State and through public consultation. Fundamentally, there is no real difference between a PWR and an ABWR from a reactor physics standpoint, in that they both use low enriched uranium oxide fuel and a light water moderator. The differences occur in the engineering to remove the heat and produce electricity.</p> <p>Whilst the ABWR is a new reactor type for the UK, considerable relevant experience of the design, construction, operation and decommissioning of similar reactor types has been accrued over many years.</p> <p>It should be noted that the UK has many decades' worth of experience of pressurized water moderated reactors for submarine propulsion and commercial electricity generation. The UK also has significant experience of pressure tube type, heavy water moderated, light water cooled nuclear reactor in the Steam Generating Heavy Water Reactor (SGHWR). This reactor was in principle the same as a BWR but relied on heavy water as the moderator whilst using conventional water as the primary coolant.</p> <p>To this end the UK is doing nothing different from the activities carried out at Sizewell B, in the UK submarine fleet or what has previously taken place at the SGHWR at Winfrith.</p>
2.	Does the application contain sufficient	YES

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	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?	<p>The application contains evidence which demonstrates that the economic, social and other benefits outweigh any health detriments. Recognising that this is a consultation document and that the arguments have deliberately been kept at a high level to avoid voluminous detail, it is considered that in some places, the addition of numerical data could have been given to support the arguments. Specifically, the following points are noted:</p> <ul style="list-style-type: none"> <li>• It is often noted that likelihood/risk of accidents is considered very low but there is no frequency assigned to this statement.</li> <li>• Further information could be provided to describe how the ABWR will differ from previous versions of the BWR and how it will be an improvement to the design. There are no specific data on reduction in operator doses in the turbine hall or the technical weaknesses of BWR and how these will be addressed in the UK ABWR.</li> <li>• There is little to no discussion of how an ABWR build programme could benefit the UK supply chain and how quality assurance or sustainable procurement will be managed.</li> <li>• There is also no suggestion for allowing businesses to benefit from the large quantity of waste heat produced further increasing the efficiency of the station. However, recognising the remote location of most reactor sites this would be part of a larger infrastructure discussion for development of those areas.</li> </ul>
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?	<p>The NIA application is comprehensive and thorough.</p> <p>Additional arguments could be presented to demonstrate that the UK already has significant expertise and knowledge relevant to BWR technology. For example see "Boiling Water Reactor Technology – International Status and UK Experience", National Nuclear Laboratory Position Paper - chapter "Overview of BWR operating experience in the UK" <a href="http://www.nnl.co.uk/media/63558/bwr_position_paper_-_final_-_web.pdf">http://www.nnl.co.uk/media/63558/bwr_position_paper_-_final_-_web.pdf</a></p> <p>A plant of this type (ABWR) with no secondary circuit must have considerably more contaminated material to decommission than a conventional PWR. This does not seem to have been highlighted within the main body and only in Annex A. A comparison of the waste with that of a PWR would be helpful. Perhaps as part of numerical arguments</p>

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		<p>suggested in (2) above.</p> <p>There is no consideration of the use of MOX fuel in the reactor. BWR and ABWR designs elsewhere in the world are capable of using MOX and stockpiled Plutonium is considered as an asset from which a benefit could be gained if used for energy generation. It would also help increase the security of the stockpile, increase the duration of fuel reserves and lower the overall risk from the fuel cycle by reducing the amount of Uranium mined.</p>
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?	<p>The key part of the NIA submission is summarised in Chapter 9.</p> <p>Maintaining the security of future electricity supplies through provision of firm, low-carbon, power generating sources (in conjunction with fluctuating renewable energy sources) is a pre-eminent requirement for the future economic prosperity and well-being of the UK population. Our existing nuclear power station fleet will largely cease operating over the next decade. Construction of new nuclear power stations is a vital part of the UK's energy strategy to ensure we maintain low-carbon power supplies in the future.</p> <p>More should be said about the essential role of new nuclear build in general, and the ABWR in particular, in "keeping the lights on" in a low-carbon future.</p> <p>Bearing in mind the above comments on the longevity of the existing nuclear fleet and the experience of EDF in construction of the EPR, it is surprising that more is not made of the baseline 40 month construction period for the ABWR. It could be operational before any of the other designs helping close the energy gap.</p>
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?	<p>The prime focus of consultation should not be those who have already researched and formed their views but that large group that need to be better informed to allow them to come to a conclusion. Information should be provided to a wide range of stakeholders, which is easy to comprehend and in an easily understandable format. It should use plain language and clarify the key nuclear safety and environmental safeguards and issue and the likely benefits of introducing this type of nuclear new build.</p>

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		<p>Consultation events should be held local to the proposed power station sites .Greatest weight should be given to the opinions of local residents as opposed to any more vocal pressure groups.</p>