

**HORIZON**

NUCLEAR POWER

ENERGY WORKING FOR BRITAIN

A UK company of E.ON and RWE

# ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT

## Response to public feedback

In November 2009, Horizon Nuclear Power submitted a request for an Environmental Impact Assessment (EIA) 'Scoping Opinion' to the newly formed Independent Planning Commission (IPC), an independent body set up by the Government to take decisions on applications for nationally significant infrastructure projects. The request was accompanied by an EIA 'Scoping Report'. As required by the Planning Act 2008, the IPC then consulted with a number of statutory bodies (listed in our Scoping Report), which assisted them in producing a formal 'Scoping Opinion'.

In addition to this, Horizon Nuclear Power also made this report available to local parish councils, statutory and non statutory groups that were not included in the IPC consultation as well as the general public for review and comment.

The Scoping Report is the first stage of the EIA process which will be carried out for the proposed development at Oldbury. The EIA will be documented in an Environmental Statement which will accompany any future application for a 'Development Consent Order' to the IPC. (The Development Consent Order is effectively the planning permission given under the new planning regime introduced by the Planning Act 2008). The Scoping Report is a high level document that describes the surveys and studies we propose to carry out (bearing in mind possible impacts to land, air and water) that will help us understand the existing environment, what impact our development would have and what 'mitigation' measures we can take to reduce this impact. Whilst the EIA scoping opinion is important, the scope of the EIA will be kept under review and amended through discussion with the key statutory bodies as more information on the development becomes known.

The formal Scoping Report from the IPC, can be viewed at:

<http://infrastructure.independent.gov.uk/wp-content/uploads/2009/12/IPC-Scoping-Opinion-Oldbury.pdf>

In addition to the responses the IPC received for statutory consultees, we received a number of responses from local parish councils, groups and individuals and we want to acknowledge these by providing further information on the issues raised.

## EIA Scoping Report – reply to responses received

### ISSUE: WASTE

Many people responding to our Scoping Report raised concerns about how waste from a new plant at Oldbury would be stored on site and how it would be managed in the long-term.

#### Our response:

The Government's Managing Radioactive Waste Safely (MRWS) Programme will lead to the identification of a suitable site for the development of a national deep geological disposal facility for legacy waste from a variety of sources, including civil (power station) and defence -related facilities. This site will also have the capacity to store waste from new-build.

Used fuel from the nuclear reactors remains radioactive for a very long time, and also produces heat that requires cooling. Provision will be made for spent fuel from the new generation of reactors to be securely stored on site in purpose built stores before being transported to this new geological disposal facility.

Intermediate Level Waste (ILW) is less radioactive than spent fuel and is non heat generating. For the new generation of nuclear reactors this will primarily comprise of waste material from processing reactor coolant water during operation and components from maintenance operations. ILW would also be produced during the eventual decommissioning of the power station. All the UK's ILW will be stored above ground on an interim basis, in purpose built stores until a new geological disposal facility becomes available.

Low Level Waste (LLW) is made up of a wide range of materials including plastic, paper, tissue, clothing and metal and is disposed at the UK's LLW Repository near Drigg in Cumbria. This disposal regime will continue for the new generation of nuclear reactors.

The storage of waste on site is subject to the highest standards of safety and the storage process is overseen by the UK's statutory authorities including the Health and Safety Executive (HSE), the Nuclear Installations Inspectorate (NII) and the Environment Agency.

Similarly, radioactive waste and spent fuel have been transported safely and securely without incident in the UK since civil nuclear generation first began. Transport of radioactive material is controlled in accordance with international treaties and standards that have been adopted into UK regulation. The Department for Transport regulates the movement of waste and transportation arrangements in the UK.

As with the current power station, radioactive waste would be transported by road/rail to appropriate disposal facilities. Transportation is carried out in liaison with bodies such as the Civil Nuclear Constabulary (CNC) and Department of Transport.

**ISSUE: HEALTH AND SAFETY**

Some Scoping Report respondents raised concerns about the health implications of living close to nuclear facilities, referring to studies highlighting possible childhood leukaemia clusters.

**Our response:**

The safety and security of the public and our employees is Horizon Nuclear Power's top priority. As part of being fully informed on the actions needed to secure the safety of the public and our employees at our sites, we will rely on the advice of the Health Protection Agency and the independent Government advisory group COMARE (Committee on Medical Aspects of Radiation in the Environment) also – The Government's National Policy Statement (NPS) on nuclear energy acknowledges the concern that some people have regarding a possible link between nuclear power stations and leukaemia. It refers to the reports produced by the Committee on Medical Aspects of Radiation in the Environment (COMARE) which is "a scientific advisory committee providing independent authoritative expert advice on all aspects of health risk to humans exposed to natural and man-made radiation". COMARE has published eleven reports on topics related to exposure to radiation. Its view is that "there is no evidence for unusual aggregations of childhood cancers in populations living near nuclear power stations in the UK."

More information on the COMARE reports can be found in the Nuclear (NPS) or on their website: [www.comare.org.uk](http://www.comare.org.uk)

**ISSUE: WORLDWIDE SUPPLIES OF URANIUM**

A number of people queried if there was a large enough worldwide supply of uranium to support a programme of new nuclear build.

**Our response:**

David Mackay, Chief Scientific Advisor to DECC (Department for Energy & Climate Change), has stated that even if current production of nuclear power doubled, the world's known uranium supplies would last for a further 250 years. This doesn't take into account sources of uranium supply not yet discovered or the known available sources in seawater which have yet to be extracted on an industrial scale. ('Without the Hot Air', David Mackay).

Replacing the existing fleet of nuclear reactors will help to ensure a diverse energy mix is retained in the UK. Nuclear power generation, as well as renewables, coal, gas and oil all have a part to play in the future UK energy mix.

**ISSUE: REQUIREMENT FOR COOLING TOWERS AT OLDBURY**

Scoping Report respondents were concerned about a new nuclear power station at Oldbury requiring cooling towers. One respondent also questioned the energy efficiency of the two main types of tower being reviewed by Horizon.

In addition, further information was requested on the local environmental impact of the plumes which may emanate from the proposed cooling towers.

**Our response:**

Horizon would like to build up to 3,300 MW (megawatts) of new generating capacity at Oldbury using one of the two reactors designs currently going through the Government's Generic Design Assessment (GDA) process – the 1650MW capacity Areva EPR or the 1100MW capacity Westinghouse AP1000. Either design would require an 'indirect' cooling system using cooling towers. This would be true even if only one reactor was built.

We are carrying out a study to decide on the most appropriate cooling tower technology, evaluating technical, commercial and environmental factors. The visual impact of the cooling towers is also an important consideration.

The studies are looking at all cooling options for the site, but focusing on two main types of cooling tower referred to as 'natural draught' and 'forced draught'. A station comprising two or three reactors would require three or four cooling towers. The towers would be between 70 and 200 metres in height, with the forced draught towers at the lower end of this range and the natural draught towers at the upper end.

The natural draught cooling towers rely on their height and shape and the buoyancy of warm air to create a natural flow of air into the bottom of the tower (the "chimney effect"). This means that the only power requirement associated with operating the tower is that associated with pumping water round the circuit.

Forced draught towers have electrically operated fans which therefore consume energy to force air through the tower. We believe that for two EPR reactors the total fan power requirement could be around 50MW. There is also a marginally higher power requirement for pumping water in a forced draught plume abatement cooling tower as a portion of the water has to be pumped through the dry section (radiators) which are higher up in the tower and will impose friction pressure losses on the fluid flows. Based on current information, this represents about a 1 per cent reduction in overall efficiency for an EPR over the natural draught cooling tower case.

When our cooling tower studies are complete we will consult the local and wider communities on our options for cooling tower design.

Further to the comments received on the impact of cooling towers on the local micro climate, it is important to stress that cooling towers are not a new technology and have been used to cool power stations for many decades across the UK. What comes out of a cooling tower is pure H<sub>2</sub>O in the form of condensed water vapour. A plume from some types of tower becomes visible when water vapour condenses in contact with cooler ambient air, like the saturated air in one's breath "fogging" on a cold day.

There is no evidence to suggest that the cooling towers plumes cause a problem or have an impact on local micro climate. However, as we move our studies on towards preparing the Environmental Impact Assessment (EIA) for the proposed power station, we will fully assess the effects of the water vapour plume.

**ISSUE: CUMULATIVE IMPACT OF OTHER INFRASTRUCTURE PROJECTS FOR THE AREA**

Many respondents raised questions on activity coordination for the development of a new power station with the decommissioning of the existing plant and a possible Severn Barrage scheme. They expressed concern about how the combined environmental impacts of these schemes would be managed.

**Our response:**

As discussed in our Environmental Impact Assessment (EIA) Scoping Report (which is available to download from the Oldbury document library on our website – [www.horizonuclearpower.com/oldbury.php](http://www.horizonuclearpower.com/oldbury.php)) the proposed development at Oldbury will consider the environmental impacts in combination with other local proposed developments and projects.

Both the decommissioning of the existing site and the possible Severn Barrage scheme are highlighted as potential developments, and our EIA studies will take account of information that exists and can reasonably be relied upon.

**ISSUE: PREVIOUS PUBLIC CONSULTATIONS FOR THE EXISTING POWER STATION AT OLDBURY**

One respondent referred to an earlier consultation carried out by the existing power station which looked at what should happen to the existing site once the current power station is decommissioned. The respondent questioned if the results of this consultation are being ignored, and what this implies for any responses to future consultations?”

**Our response:**

In 2006, all NDA sites held consultations on the decommissioning of the existing stations. The consultation included questions which asked people their views on what should happen to the land taken up by the footprint of the current power station and additional land owned by the NDA once it has been fully decommissioned. The Site Stakeholder Group (SSG) reported back to the NDA with the final comments from the consultation, a copy of this report is available on the SSG website – [www.sitestakeholdergroups.org.uk/oldbury/loader.cfm?csModule=security/getfile&pageid=909](http://www.sitestakeholdergroups.org.uk/oldbury/loader.cfm?csModule=security/getfile&pageid=909).

The consultation was on the ‘end state’ of the land and not on what should happen to the land once the ‘end state’ had been reached. This means that it was focused on getting the land to a desired state that could be reused for any purpose deemed suitable in the future. This consultation took place several years before the Government published the Nuclear White Paper in 2008 and E.ON UK (or its newly formed joint venture, Horizon Nuclear Power) began discussions for a new development on the land adjacent to the existing site.

Horizon Nuclear Power is committed to full and open consultation and engagement on our proposals for a new station at Oldbury and we have already held several local exhibitions, issued newsletters, and arranged drop-in sessions. We want to ensure that the local community have opportunities to ‘have their say’ as we develop and take our proposals forward. All of the public work we have done to date has been part of our informal public engagement plan. However, in the future we will be inviting people to take part in a formal pre-application consultation process. The results of our formal consultations will be submitted to the Infrastructure Planning Commission (IPC) in a ‘Consultation Report’. At the same time as we submit our application for a Development Consent Order (akin to planning permission) and the IPC are required to consider our public consultation processes as part of the assessment of our application.

**ISSUE: IMPACT OF TEMPORARY WORKERS ON COMMUNITY DURING CONSTRUCTION**

A number of respondents raised concerns about the impact of temporary workers, many of whom may be from overseas, on the local communities around the site. In addition, the safety of local people as a result of this influx was also questioned.

**Our response:**

The Socio-Economic section of our Environmental Impact Assessment (EIA) and written Environmental Statement (ES) will look into the options for workers' accommodation and transport during the construction and operation phases of the proposed development. We are also having discussions with the South West Regional Development Agency (SWRDA) on the availability of local workers and how we can work with the education system to ensure there are local skills available once construction begins.

Under EU legislation we cannot rule out the use of contractors and temporary labour from overseas, but we would look for measures to encourage the use of local companies and labour to boost the local economy wherever possible. Some local temporary accommodation is likely to be required and the Transport Options Study we are currently undertaking will identify at a high level the likely scale of temporary accommodation requirements and where best it could be located to minimise disruption to local people, this would be further developed into detailed proposals in our eventual planning application.

**ISSUE: THE IMPACT OF A NEW PROPOSED POWER STATION ON LOCAL TRANSPORT INFRASTRUCTURE**

The impact of the proposed new station on the local transport network, particularly during the construction phase, was an issue raised by many. Respondents questioned what improvement measures are planned.

**Our response:**

We are currently carrying out a Transport Options Study which is looking at a range of options, including road, river and rail transport, for bringing materials and construction workers to site. Our preferred option for delivering bulk materials and abnormal loads to site is to use river based transport with the construction of a marine offloading facility (MOF) adjacent to the site. However, some road transport will also be required and the transport options study will look at what improvements are needed to the existing road network.

For example, one of the options we are investigating to ease traffic on the roads close to the site, is a 'park and ride' type initiative close to the M5. This would allow construction workers to travel from surrounding areas and then be transported by bus to the site.

We will be consulting upon the findings of the studies in due course, as part of the pre-application consultation process described earlier.

**ISSUE: INITIAL GROUND INVESTIGATIONS (GI STUDIES)**

A number of respondents referred to local reports that no bedrock was found during recent ground drilling at the site. They questioned if this implies that it is not a suitable location for new nuclear build.

**Our response:**

The new power station foundations would be constructed by excavating through the soft alluvium layers to the underlying rock in the Mercia Mudstone group in a similar way to the existing station. The preliminary ground investigations verified the thickness of the alluvium, the depth to the underlying rock layers, groundwater depth and the properties of the soils and rock.

This allows us now to begin preliminary foundation design work. Further detailed investigation will be required and will influence the layout. The ground investigations did reveal that some of the rock layers are thicker than indicated in historical records and reports, and this will be reflected in the design of the foundations.

**ISSUE: CONNECTION TO THE NATIONAL GRID**

Some people expressed concern over whether new power lines would be needed for the proposed new station and where these lines would go.

**Our response:**

There are currently two 132kV (132,000 Volts) overhead lines connecting the existing Oldbury station into the National Grid. To be able to export the electricity generated by the proposed new station these two lines will need to be upgraded to 400kV. This involves "restringing" (i.e. replacing the existing "wires" with wires of a greater capacity) on the existing towers. The majority of the existing towers along the route to the station will remain in place.

Some new towers and overhead lines will be needed close to the station, as there will be a requirement to divert the line from the existing substation on the Oldbury site to a new substation. Redundant towers and lines will be removed. This work will be carried out by National Grid (NGET) who will be carrying out their own consultation process in due course.

National Grid would also carry out other 'reinforcement' works away from the site itself, but some of these works would be required to support other planned generation projects, not just Oldbury.

**ISSUE: FLOOD RISK OF A SITE ADJACENT TO THE RIVER SEVERN**

Flood risk was a concern raised by many respondents, both in relation to the proposed site and in terms of the effects on the local area.

**Our response:**

The requirements for flood protection for nuclear power stations are very stringent, and there is a requirement to protect our site from a 1 in 10,000 year flood event.

Proposals for ensuring this level of protection are being developed in conjunction with the Environment Agency (EA) and are likely to consist of a combination of raising the site level and improving existing flood protection measures. Whatever solution is finally proposed we will have to demonstrate to the satisfaction of the regulators that the flood protection measures do not increase the risk of flooding elsewhere in the locality.

**ISSUE: NATIONAL INTEREST OUTWEIGHS OTHER CONSIDERATIONS IN THE SITING OF NEW NUCLEAR POWER STATIONS IN THE GOVERNMENT'S DRAFT NUCLEAR NATIONAL POLICY STATEMENT (NPS) STATEMENT**

Several respondents referred to the (NPS EN-6). In particular, one response received queried what Horizon's view is on the statement within the NPS that the visual impact at this site does not matter when compared to the national interest.

**Our response:**

As part of our cooling tower technology study we are carrying out a landscape and visual impact assessment which is looking at the impact of the proposed development on the landscape and visual amenity. We will be consulting the local and wider communities on our proposals as they develop, and on our assessment of environmental impacts. Visual Impact will also be addressed in detail in the Environmental Impact Assessment (EIA) that would accompany any future planning application and will be a key consideration for the IPC in deciding whether to approve plans for development.

**ISSUE: SITE ACCESS**

One response received queried if Horizon is proposing to use the track by Jobs Green Farm as the main route for station access

**Our response:**

This route is unsuitable for the station access and only intended to be used for access to the contractor's area while we are carrying out initial site investigations. A new station access is likely to be constructed from a point close to the entrance to the existing station across to the proposed development site.

**For further Information:**

Further information on our proposed scheme for a new nuclear power station at Oldbury is available at [www.horizonnuclearpower.com](http://www.horizonnuclearpower.com). This includes a Frequently Asked Questions (FAQs) section.

Horizon Nuclear Power is committed to engaging with local communities as our project develops. Future events will be promoted via our web site, newsletters and in local media.

If you have any queries you would like to raise with us please call our usual freephone number **0800 130 3125** or email us at [oldburyenquiries@horizonnuclearpower.com](mailto:oldburyenquiries@horizonnuclearpower.com)