

Our application for a Radioactive Substances Regulation Environmental Permit

November 2017



What is radiation?

Radiation is energy transmitted in waves or a stream of particles e.g. light, heat, X-rays or electrons. It is everywhere, and we are all exposed to low levels of background radiation every day.

Guidance from the Department of Health states that on average, around 85 per cent of the UK population's exposure to radiation comes from natural radioactivity, radon gas and foodstuffs. The other 15 per cent is almost entirely the result of exposure during diagnostic medical examinations such as CT scans and X-rays.

Radiation in the environment due to human activities is less than 0.2 per cent of the total exposure received from all sources of radiation (natural and human). Radiation from the UK's nuclear industry contributes less than 0.1 per cent to the total background radiation exposure received by members of the public.

In summary, exposure to radiation from the nuclear industry is significantly lower than the exposure received from natural background radiation.

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Nuclear power in the UK

Nuclear power stations in Wales are strictly regulated by the Office for Nuclear Regulation (ONR) and Natural Resources Wales (NRW).

In 2011, the UK government confirmed nine possible sites for the development of new nuclear power stations

to produce a reliable, consistent source of low-carbon energy for tens of millions of homes. Among those chosen was the site for Wylfa Newydd in north Anglesey, next to the existing Magnox power station, which is currently being decommissioned.

Safely using radioactive materials at Wylfa Newydd

Wylfa Newydd will comprise two UK Advanced Boiling Water Reactors (UK ABWRs), capable of generating low-carbon electricity for around five million homes for at least 60 years.

If it is not managed safely, radiation can be harmful to both people and the environment. The UK ABWR has been designed to minimise the generation of radioactive waste and the effects of radiation on people and the environment.

We will also ensure that the waste produced is dealt with appropriately.

The current UK strategy is that spent fuel generated through the operation of new nuclear power stations will not be reprocessed. It will be stored securely on site until a National Geological Disposal Facility is available.

Our application to NRW

Horizon has applied to Natural Resources Wales (NRW) for a Radioactive Substances Regulation Environmental Permit to undertake a "radioactive substance activity" at the proposed Wylfa Newydd Power Station.

If granted, the permit would enable the management, discharge, transfer and disposal of radioactive material from the Power Station, all closely monitored by NRW.

Our application:

- describes the nuclear reactor technology which will be employed, and the Power Station's principal plant and systems
- assesses the radiological impacts on the local community and wildlife
- identifies the sources of radioactivity, and the techniques that will be adopted to handle and treat gaseous, aqueous and solid radioactive wastes
- demonstrates how the design of the Power Station will ensure the protection of people and the environment through the use of Best Available Techniques, to minimise the movement and volume of radioactive wastes
- proposes limits for the discharge of gaseous and aqueous radioactive wastes to the environment
- sets out how these releases will be closely monitored to protect human health and the environment
- gives an overview of the processes in place to manage the radioactive waste generated by operations

Safeguarding human health and the environment

Our application includes a number of detailed assessments to make sure that any routine radioactive discharges and radiation from the Power Station are safely within the limits set out by the UK Government. Any potential impacts on people and the environment have been studied in detail.

Continuous environmental monitoring will also be carried out throughout the lifetime of Wylfa Newydd to understand and control the effect of any discharges from the Power Station on the environment.

Next steps

Having submitted our application, NRW will conduct public consultations before considering whether to issue a Permit.

For more information visit our website at www.horizonnuclearpower.com where you can view a copy of our full application, together with the supporting documents.

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