HUNTERSTON B POWER STATION

EXPLAINING GRAPHITE

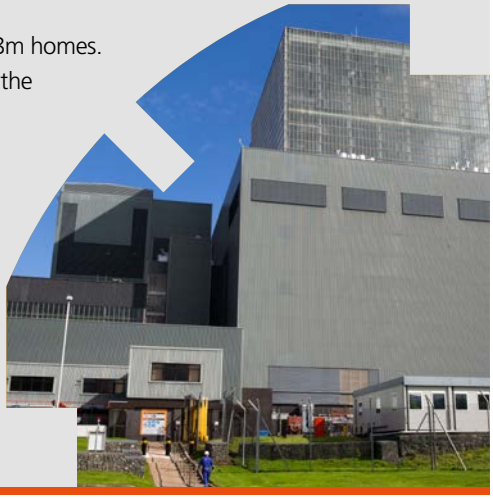
Since we took the first Hunterston unit off in March 2018 we've completed an **extensive inspection programme,** one of the most detailed of its kind in the world. This is all about ensuring that the power station continues to **safely generate low carbon electricity** and play a significant role in Scotland's energy production.

ABOUT THE POWER STATION

Hunterston B power station is needed to generate low carbon electricity for 1.8m homes. EDF Energy provides renewable and nuclear energy in Scotland and recognises the importance of both to Scotland's energy needs.

The power station employs around 700 – both staff and contractors – and provides much-needed investment and employment in North Ayrshire, contributing £54m per annum to the local economy.

Bringing Hunterston B safely back into energy production will ensure that the energy needs of the nation are met and Hunterston B can continue to play a significant role in the local and national economy.



Our Commitment to **Your Safety**

Safety has always been and remains our number one priority. As nuclear power stations like Hunterston B age, fine cracks occur in the graphite bricks which make up the reactor core. While this is entirely expected we take this very seriously and have been continuously monitoring those that have occurred at Hunterston B Power Station.

Nuclear safety drives everything we do. This means we work within very large safety margins. Our approach to safety means that we would stop operations long before anything which would affect the reactor's safe operation.

Neither EDF Energy nor ONR, the UK Nuclear safety regulator, would ever allow the Hunterston B reactors to restart unless completely satisfied that it's safe to do so.

Safety **Update**

We've had Reactor 3 shutdown for 12 months and we've taken time to inspect it, so we know what condition it is in. In that time we've improved the modelling of the reactor operation in normal conditions and in a highly unlikely earthquake, and we can show conclusively that it will operate and shutdown as designed, with absolutely no erosion of safety.

We have been working with leading consultancies and expert academics at universities across the UK including Strathclyde, Glasgow, Bristol, Manchester, Oxford, Sussex, Nottingham and Durham as well as with leading UK companies such as AMEC Foster Wheeler, W S Atkins and Fraser-Nash. And we have spent more than £125m in the last six years and invested more than 1000 person years into research.

Hunterston B and You

We will continue to engage with and inform the local community and work with the industry regulator to maintain the highest possible safety standards. To find out more detailed information and background to Hunterston B graphite core visit our website.

A link to the website can be found at:

www.edfenergy.com/energy/graphite-core

Our five-star rated visitor centre is also open Monday to Friday: 09:00–16:00.

ABOUT GRAPHITE

Graphite bricks are used in the reactor cores of all 14 Advanced Gas-cooled Reactors (AGRs) in the U.K. The graphite bricks act as a moderator. They reduce the speed of neutrons and allow a nuclear reaction to be sustained. They also perform an important safety function by providing the structure through which CO2 gas flows to remove heat from the nuclear fuel and the control rods used to shut-down the reactor are inserted.

Our reactors are **HUGE** structures:

Each one is 10 metres high, has a diameter of 10 metres and weighs 1400 tonnes – equal to

110 double decker buses.

Each reactor core is made up of around

3,000 fuel bricks

measuring 825mm high and 460mm external diameter which are all connected together, bound by a steel restraint and contained within a concrete pressure vessel which is over three metres thick.

Uranium fuel is inserted into the reactor in a fuel assembly through channels in the graphite core. Control rods, containing boron, are also inserted through other channels in the core to control the reaction and also used to shut down the reactor. We have 81 control rods in each reactor but only 12 are needed to shut it down.