

Nuclear Power Stations

This feature examines the **Hunterston** facility in Ayrshire, Scotland, to illustrate the layout of a typical nuclear power station in the UK. As in coal and oil-fired power stations, electricity is produced by heating water to create steam, which is then used to turn a turbine and thereby generate electricity. In a nuclear power station, however, the fuel is uranium, which produces heat by nuclear fission.



1. MAGNOX REACTORS

Magnox gas-cooled reactors were the earliest British-designed nuclear reactors and were installed at eleven sites in the UK. Two **reactor** vessels were installed at Hunterston, housed in the cylindrical towers seen at the centre of this image.

The reactors at this site were built in a raised position to allow refuelling from **below**. The **turbines** are co-located in the adjoining generator hall, on the left.



2. AGR REACTORS

Advanced Gas-cooled Reactors (AGR) were the second generation of British nuclear power station. At Hunterston, two reactor vessels are housed in the box-like building seen on the right in this image, with turbines located in the adjoining generator hall, to the left.

A back-up oil-fired power station is located adjacent to the reactor building (at upper left), to provide a failsafe supply of emergency power.



3. TRANSFORMER YARD

Electricity generated at the station is distributed to consumers via the National Grid. Transformers step-up the voltage for onward transmission by overhead power cables suspended from steel pylons. In this image, powerlines are visible leading from the **transformer yard** to upper right.



4. ADMINISTRATION & SUPPORT

Located between the two reactor buildings is the administration and control block, with a staff and visitor car park adjacent. From here, staff monitor the operation and security of the reactors and the management of the site.



5. COOLING

Sea water is pumped into the power station to cool the steam condensers, before being released back into the sea. This image shows warm sea water being flushed from the outfall pipe, indicating that at least one reactor is in operation.



6. SECURITY

To control access to the power station, a guardhouse is provided at the main entrance. Here, visitors and vehicles are vetted and security personnel check access permits. A barrier prevents unauthorised access and a continuous security fence encloses the site.



