The Turbine Generators

The tonnes of water that are converted to steam in the boiler go directly to the turbine. Released from the pressures within the boiler, the superheated steam expands quickly and forces the turbine to rotate.

The turbine, like a rotor inside a jet engine, has a large number of vanes or blades, which convert the force of the expanding steam into a rotational force. The generator that is attached to the turbine is just a magnet within a coil, and it is the magnet that turns by the steam entering the turbine.

In 1831, Michael Faraday discovered something very simple: electricity is produced when a magnet is turned within a coil of metal. So simple and yet so significant.

We use an electromagnet at the Power Station but on quite a large scale. We're just employing Faraday's simple discovery, by using a turbine to rotate a magnet within a coil to produce electricity. Mind you the complete machine weighs in at 700 tonnes.

The turbine rotates at 3,000 rpm, generates 200 megawatts of power at 50 hertz and produces electricity with a voltage of 16.5 kilovolts that is then transformed to 220 kilovolts for transmission across Victoria and interstate.