

EMBARGO : 12.00 GMT

NUCLEAR FUSION : MORE ENCOURAGING RESULTS OF THE FIRST EXPERIMENTS ON JET

The Joint European Torus, JET, which is the largest fusion experiment of its kind in operation continues to achieve world records.

In JET, currents of up to 3.7 million amperes have been passed through both hydrogen and deuterium gas producing high temperature plasmas of up to 40 million degrees. The maximum value of the energy confinement time of 0.6 seconds (a measure of the magnetic field's confining efficiency), is also a record and is within a factor of three of that envisaged in a fusion reactor but the density and temperature need also to be increased by a similar factor. These promising results have been achieved with an input power of about 3 mw; over the next four years 25 mw of additional heating will be progressively installed to raise the plasma temperature towards that required to produce abundant fusion reactions (i.e. 100 million degrees).

JET's plans are to build up to full power and then in 1989/90 introduce a mixture of deuterium and tritium gas into the apparatus to produce abundant energy-yielding fusion reactions. This will be a major step in Europe's plans for the development of a nuclear fusion reactor for electricity production in the next century.

These results were presented by JET experts at the 10th International Conference on Plasma Physics and Controlled Nuclear Fusion Research in London today (12 September).