

Institute of Physics

LONDON AND SOUTH EASTERN BRANCH REMS SECTION

Visit to the Jet Project UKAEA Culham Science Centre Thursday 29th May, 2003

This visit has been organised by Robert Thorne

JET, the Joint European Torus, is the flagship of the European Community Fusion Programme. The work is being carried out by a team of scientists from the EU and associated countries and includes other international scientists. The Jet Joint Undertaking was established in 1978 and coordinated by Euratom with the objective of making it possible to carry out fusion tests under conditions that closely resemble those of a commercial fusion power plant. A major milestone on this route is the achievement of a break even position i.e. when the energy produced by the fusion reactions exceeds the energy to heat the plasmas – 65% of this target has been achieved.

Knowledge gained from JET will provide valuable input data for the proposed next stage device – the International Thermonuclear Experiment (ITER) designed to study the physics of burning plasmas and the engineering principles required for a commercial fusion power station.

The actual construction of JET began in 1978 and has been in operation since 1983. In November 1991 JET became the first experiment to produce controlled fusion power. Further experiments have provided some information about the parameters needed for ITER. In 1997 JET operations included successful experiments using the mixed deuterium – tritium fuel planned for future power stations.

The organisation responsible for the building of JET and operating it for more than 16 years, the JET Joint Undertaking terminated on 31 December 1999. A new agreement was negotiated transferring the ownership of the JET facilities to the custody of the United Kingdom Atomic Energy Authority with the overall implementation and co-ordination of the scientific programme with the European Fusion Development Agreement Close Support Unit.

Numbers will be restricted to 20-25. Clearance will need to be arranged for those who do not hold passports of the EU – this can take up to 14 days. The cost will be £1.50.

The programme is as follows:

10.45	Report to main gate where directions to the assembly point and parking facilities will be given
11.00 - 11.30	Tea / Coffee
11.30 – 12.30	Presentation on work at Culham Science Centre
12.30 – 13.30	Buffet Lunch
13.30 – 15.45	Tour of UK and JET facilities

For those travelling by Public Transport, while Culham Station is 10 minutes walk from the site, the train service is infrequent and Didcot Parkway is recommended. Arrangements can be made to meet attendees, who arrive at Didcot Station by 10.15. For those arriving later please use a Taxi. A map will be provided for successful applicants.