

JET

Permission to land

The delays experienced by the EEC's Joint European Torus (JET) fusion project are over. Chris Sherwell reports

A FULL two years after the matter came before it, the EEC Council of Research Ministers has agreed on the research laboratories at Culham near Oxford as the location for the next stage of the Community's fusion project, JET. The choice, made at a Council meeting on Tuesday, ends a controversial wrangle that has damaged the Community as well as the project. The decision also paves the way for the establishment of a JET Council, the release of funds to boost a stalling research effort and the appointment of a project head.

Political rather than scientific disputes have persistently hamstrung the £100-million project. Contracts for the team based at Culham have had to be extended at the last moment many times, and continuing uncertainties have driven some members away. Only last week Paul Rebut, the present project leader and a strong candidate to head the next phase, warned that rebuilding the team would take at least six months. Over the past 18 months JET has come up at five Research Ministers' meetings, two Foreign Ministers' meetings and one heads of government meeting; there have been six elections, and seven research ministers have changed; so have six foreign ministers and four heads of government.

The site of the project has sparked most controversy. National interest arguments prevented agreement on any of the four sites originally pro-

posed (Ispra in Italy, Cadarache in France, Garching in Germany and Culham in Britain), even when they were eventually whittled down to Garching and Culham. A widely expected decision failed to materialise at a Research Council meeting in March this year, and EEC heads of government passed the matter three months later to the Foreign Ministers. When they too failed to agree, everything seemed to hang on Anglo-German exchanges. But the Schleyer kidnapping intervened, no exchanges took place and JET was not discussed at a Foreign Ministers' meeting in September.

The breakthrough finally came last week when the West German Chancellor, Helmut Schmidt, and the UK Prime Minister, James Callaghan, met in the aftermath of the successful Mogadishu raid. Its euphoric effects, and Britain's supporting role in it, may have helped the two men submerge differences on matters like Community budget contributions. They agreed that a site for JET should be decided by a consensus—in other words, that neither country would veto whatever preference the majority expressed. This was conveyed to the Foreign Ministers' meeting in Luxembourg the same day, and though Germany did not waive her claim for Garching, the immediate presumption, based on past voting intentions, was that JET would go to Culham when the Research Ministers met in Luxembourg. In the event, five countries voted for Culham and two for Garching. One of the two abstaining countries went with the majority. Earlier fears of an Irish veto proved unfounded.

Reports that two JET projects were being discussed gained credence at a press conference in Brussels on Mon-

day given by Guido Brunner, the EEC's Energy and Research Commissioner. Culham and UK Foreign Office spokesmen last week discounted the idea, the former pointing out that even if this referred to the possibility of siting 'Super JET' or 'Jumbo JET' (as the next phase is known) in the country which failed to win JET, such a decision could not be taken bilaterally. The impression nevertheless remained on Monday that the Research Ministers would take a consensus view on locating the next phase at the losing site, and that ancillary fusion research might also be used as compensation.

The removal of other potential obstacles at a meeting of high-level officials a week earlier also assisted agreement on a JET site. Helpful concessions from France, which originally proposed a JET Council to manage the project and saw it become a stumbling block, produced agreement that the member states, along with other participating countries (Sweden and Switzerland), would each have two members on it, one a scientific expert. Voting will be weighted, 26 out of 37 constituting a majority. The Council, which will have a scientific council to consult at its convenience, will meet as and when necessary. Once it is established (initially in interim form) and funds become available, the senior scientific appointment for the project will be made. But that could prove as politically contentious as anything that has befallen JET so far.

The aim behind the £100-million project—often forgotten by the politicians, often simplified as "cheap, safe and abundant energy supplies"—is essentially to construct a third-generation tokamak device. The equivalent device in the USSR is known as T-20, in the USA as TFTR, and in Japan as T-60. □

DIOXIN

Informing on 2,4,5-T

Alastair Hay looks at two recent reports on the controversial herbicide 2,4,5-T

MANUFACTURERS and users of the herbicide 2,4,5-T are not letting attacks on it pass without comment, if two recent reports that attempt to vouch for its safety are anything to go by. The first, a Dow Chemical Company report to the US Environmental Protection Agency (EPA), insists that there is no "significant hazard" to humans asso-

ciated with its use. The second, from the UK Forestry Commission, claims that if foodstuffs or water supplies should become contaminated with 2,4,5-T, "serious consequences [for humans or animals] are unlikely" to occur.

The use of 2,4,5-T has aroused concern since the late 1960s when formulations of the herbicide in use in Vietnam were shown to be contaminated with 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (dioxin), which is highly toxic and a known teratogen. The public outcry,

together with scientific criticism of the use of 2,4,5-T, led the EPA to prohibit its use around homes, recreational sites, aquatic areas and on human food crops. In 1975 an EPA study reported that dioxin had been found in beef fat taken from cattle in areas where 2,4,5-T was known to have been used.

The Dow study was undertaken to assess these EPA findings. In a two-year study Dow scientists fed rats diets containing 0.1, 0.01 and 0.001 $\mu\text{g kg}^{-1}$ of dioxin a day. The animals receiving the highest dose experienced the known clinical and pathological symptoms of dioxin exposure—decreased weight gain, decreased red blood cell and