



## **CULHAM LOCAL LIAISON COMMITTEE**

Meeting reference CLLC(08)M1

**Date** Thursday 1 May 2008

**To** Prof. Chris Llewellyn Smith (Chair) UKAEA Cllr A Purse – OCC  
Mr Martin Cox UKAEA Cllr John Stimson, Long Wittenham PC  
Mr Chris Carpenter UKAEA Cllr Laurel Symons VWHDC  
Mr Mike Hurp UKAEA Mr Bob Griffiths - Culham PC  
Dr Anthony Webster UKAEA TU Mr Chris Dupond - Clifton Hampden PC  
Ms Christina Mrozek EFDA-JET Ms Cathy Collins – Environment Agency  
Cllr Tony Crabbe – OCC Mr David De Leyser – Crystalox  
Cllr David Turner – OCC

**Apologies** Ms Tamsin Atley - OCC Miss J Randle – SODC  
Mr R Holcombe - European School Ms O Garfoot - Nuneham Courtenay PC  
Ch Insp S Edwards – CNC Mr Malcolm Barents – NDA  
Mr T Williams VWHDC Mr Rob Burgess – LGC Forensics  
Mr Chris Campbell - Sutton Courtenay PC Ms Lynn Williams – LGC Forensics

## **MINUTES**

### **1. Welcome – Chris Llewellyn Smith**

Chris Llewellyn Smith welcomed the attendees to the meeting.

### **2. Minutes of Last Meeting**

The minutes from the meeting of 17<sup>th</sup> October 2007 were accepted and approved.

### **3. Matters arising**

At the last meeting it was discussed that changes to the First Great Western train service to Culham had made commuting difficult for people travelling to and from site. Following discussions with commuters on site, the first priority was agreed to be to reinstate the 5pm service to Oxford. Chris Llewellyn Smith wrote to First Great Western in January 2008 highlighting the issues of the low number of trains stopping at Culham, the unreliability of service and poor provision of notices made available to commuters. A reply was received from First Great Western stating that the 5pm service would be reinstated. The letter was copied to Adrian Saunders of Oxfordshire County Council who also replied, giving support, and stating that if the service was reinstated something else would be dropped. In fact, from talking to commuters more recently, it appears that nothing has been dropped and the 5pm service has been reinstated. A survey of commuters will be undertaken at some point.

### **4. General developments – Chris Llewellyn Smith**

Since the last meeting a great deal has happened at Culham and within fusion. On the world stage the big project taking fusion forward is ITER. ITER, which is being built by a global partnership in the South of France, has legally existed since 24 October following the ratification of the Agreement. The first ITER Council met at the end of November 2007, when Chris Llewellyn Smith was elected Chair, a role he will continue after leaving Culham.

The ITER organisation has not got off to an easy start, as with any new project it is a difficult challenge. The ITER design was reviewed last year (having been frozen since 2001 when negotiations began). Technology has moved on and new design options are being adopted for some components. These changes, and the discovery that some things were never costed, or under costed, will lead to major increases, as will the enormous increase in commodity prices since 2001. Extra money will be needed to build ITER and difficult discussions are expected at the ITER Council in June where there will be an exchange of views. Hopefully by November agreement will be reached. The effects will have a knock on effect on fusion in Europe, including UKAEA and JET, with a squeeze in Euratom Funding. ITER is considered to be the first priority.

Over recent months, Culham has lost quite a few staff to ITER and one or two to the Fusion For Energy Agency in Barcelona (the Agency responsible for ITER procurement in Europe). This was to be expected, and staff had not been discouraged from applying as ITER needs expertise. Movement to ITER is now down to a trickle and is no longer a big issue.

Laurel Symons asked if UKAEA is paying for staff who have moved to ITER. Chris Llewellyn Smith replied that anyone who goes to ITER has to resign from UKAEA.

At the moment JET is formally funded to operate until 2010, but is due to undergo a major upgrade. The upgrade has slipped in time, and it is looking pretty clear that JET will now need to operate until 2014. At the last EFDA Steering Committee it was unanimously agreed and that funds should be sought to make this possible. The CCE-FU (a committee made up of Government Representatives which advises Euratom/the European Commission) unanimously adopted the resolution to seek money to fund JET; this was recognised as a priority. It is likely that money will be found to enable JET to run to 2014. At the moment there is an ongoing review of European fusion facilities, which is asking about the continuation of JET, possibly to 2020. If this was carried forward, it would be good news, as JET (after ITER) is the next highest priority.

The European Fusion Facilities Review, which was set up by Euratom/the European Commission and the CCE-FU, is a recognition that the time has come to define what is needed in parallel with building and using of ITER. The fusion community, under the umbrella of EFDA (the European Fusion Development Agreement), has done a lot of work over the last year to try to agree what are the priorities. Papers are being submitted to the ongoing review describing what is needed. The review panel consists of five European members, from outside fusion, and four fusion scientists from outside Europe. The panel are taking an independent and quite critical look. Culham is presenting the proposal to upgrade MAST to the committee, which will also receive a proposal to extend the running time of JET to 2014, and perhaps beyond. The MAST upgrade proposal fits in well with general priorities that have been agreed by EFDA. Euratom's response to the Facility Review could have a big impact on the UK and the programme.

Anthony Webster asked what would be the potential risks if there was a budgetary squeeze as a result of increases in the cost of ITER. Chris Llewellyn Smith replied that the reaction of the European Parliament and the Council of Ministers would almost certainly be that resources should be found somewhere in the Euratom programme, although its budget is not big enough on its own to solve the problem. This would be very damaging, and a false economy in the long-run, as weakening the on-going programme would increase the time needed to get full results from ITER. Discussions will be held with MEPs as Parliament will be involved at some point. Visits have also been scheduled within the next three months from John Denham (Secretary of State) and Ian Pearson (Minister). Discussions will also be held with MPs within the UK. Anthony Webster pointed out that the uncertainties could be recognised as a risk and asked whether the UK programme is structured in a way that it can

still operate. Chris Llewellyn Smith replied that while the ITER funding situation was bad news, the likely continuation of JET is good news for Culham.

Last year Culham submitted an application to the Engineering and Physical Sciences Research Council (EPSRC), the body which funds fusion in the UK, for a new grant for the period 1 April 2008 to 31 March 2010. While an increase in funding was sought, the additional amount requested was modest as the proposed upgrade of MAST, which is a central part of Culham's plans for the next 10 years, was being considered separately for possible funding from the Large Facilities Fund. It was disappointing that large facilities funding was not provided for the upgrade. On the other hand, the visiting panel that reviewed the grant application in November strongly endorsed the upgrade. As a result, when awarding a new 2 year grant, EPSRC provided "indicative funding figures" for 4 further years and asked Culham to consider whether inside these figures the upgrade would be possible. The new 2 year grant will provide level funding in real terms for the next 2 years, not as much as hoped, but not bad given that the pot from which EPSRC funds fusion has decreased by 5%.

Although funding will be very tight, Culham believes that the indicative funding figures will be enough for a major first stage of the upgrade, comprising two-thirds of the total, provided that the traditional matching funding is available from Euratom. EPSRC's Fusion Advisory Board had endorsed these plans in January, and agreed that Culham could say to the world that stage one of the upgrade is funded as far as the UK is concerned. This put Culham in a good position going into the European Facilities Review, whose outcome will be critical for the upgrade. Meanwhile collaborators who could contribute to and speed up completion of the upgrade are being sought worldwide.

In response to a question from Laurel Symons about US funding for ITER, Chris Llewellyn Smith confirmed that the US Congress had set the budget to zero for this year, while agreeing to a small increase in funding for the US domestic fusion programme. This was a result of a dispute with the President over funding for Iraq. The situation was worrying, but it was expected that funding would be restored eventually.

There have been various changes in the organisation of Culham since the last CLLC meeting. As Chris Llewellyn Smith's appointment ends on the 7<sup>th</sup> September, a search started last year for a successor. The appointment committee (led by the CEO of UKAEA, Norman Harrison) announced before Christmas that Prof Steve Cowley had been appointed as Culham's new Director. Steve Cowley is a British graduate from Oxford, who did his doctorate at Princeton in the US, before moving to UCLA, after spells at Culham and at Princeton. He also holds a joint appointment at Imperial College, London. Steve Cowley is a distinguished theorist who is expected to be an outstanding Director, and will be particularly well placed to foster collaboration with the US. Steve Cowley will be on site from the 1<sup>st</sup> June for an overlap period before he takes over on the 8<sup>th</sup> September.

Chris Llewellyn Smith will remain engaged in fusion to the end of the 2009 as Chair of both CCE-FU and the ITER Council. This move is good for Culham as there will be feedback from both bodies.

Since the last meeting Frank Briscoe has retired (his formal end date is in June, but Friday 25th April was his last day on site). Frank has been at Culham since 1974 and carried out a fantastic number of things. His work in fusion has been recognised by the EU and as such he will continue on the ITER Advisory Committee and with their Science and Technology Committee as a Government Representative. As a result of Frank's retirement, he has been replaced by Martin Cox (Assistant Director Operations), and a new role has been made for Derek Stork (Assistant Director Technology). As both Martin and Derek were previously Department Managers, they have been replaced by David Martin and Tim Jones.

## **5. EFDA-JET Report – Christina Mrozek**

As reported earlier, discussions of extending JET beyond 2010 have begun. Operations have resumed again following the shutdown and campaigns are scheduled to the end of the year. It is expected that 350 scientists will visit throughout the year, with about 100 at Culham at anyone time.

## **6. UK Fusion Report – Martin Cox**

As mentioned by Frank Briscoe at the last meeting, MAST was, at that time, in shutdown and various enhancements were being carried out. The shutdown was completed to plan and MAST is currently coming back into operation. The two neutral beam heating systems are being brought back on line; one is approaching readiness for operations and the second, which was upgraded during the shutdown, is currently being commissioned. In addition, through a collaboration with the US, we are in the process of obtaining a microwave heating source for installation on MAST. The source is being tested at Oak Ridge National Laboratory and expected here in a few months, dependant on the testing. The MAST enhancement work also included of adding coils within the vacuum vessel to control instabilities and wiring these to new power supplies. All the upgrades are proceeding as expected and MAST should be fully operational fairly soon.

The second area to report is the reorganisation of UKAEA, which is still progressing well. The UKAEA transformation committee had its final meeting last week. As a result of changes initiated by the NDA, Windscale has moved out of UKAEA and has been absorbed within BNFL. Six months ago it was reported that Dounreay was about to enter shadow operation as a Site Licence Company. It has now gone through the required six months in shadow mode has been set up as an independent company within the UKAEA Group. The Harwell and Winfrith sites are going to be operated by a Site Licence Company called Research Sites Restoration Ltd, which is about to enter the shadow operation. Finally, UKAEA Ltd, has become established and is undertaking work for a variety of nuclear operators in addition to being the owner of the site licensing companies. The UKAEA Headquarters staff have moved to Manor Court, Chilton. While UKAEA is still one organisation the corporate activities will be based at Manor Court. Hence there has been a lot of activity and change within UKAEA but Culham remains largely unaffected by this so far but as site competition occurs, and UKAEA Ltd heads towards the private sector, Culham will be the main remaining part of UKAEA.

Chris Llewellyn Smith commented, on a related matter, that discussions have continued (until recently) on who should 'own' the UK fusion programme fusion when the rest of UKAEA moves to the private sector. At the moment it is funded by the Research Councils (which come under DIUS), although ownership of UKAEA, including the fusion programme, lies with the Shareholder Executive (which is part of DBERR). The Shareholder Executive originally asked for recommendations on the future 'home' of fusion by the end of March this year. More recently, this has now slowed down, and is unlikely to be back on the agenda pending Sir Keith O'Nions successor as Director General of Science and Research taking office in the autumn.

Chris Llewellyn Smith then gave an update on the outreach programme which ranges from interaction with schools, starting at primary level, through visits and talks to general audiences, to influencing Government Ministers. In the last five years he had given approximately one talk a fortnight, in the UK as well as across Europe, and in countries such as the USA, Australia, Japan, Korea, etc. It is impossible to measure their impact, although they appear to have some positive effect. There have also been many talks at universities in the UK and Steve Cowley will continue giving such talks, along with others from Culham.

Culham's open evenings (approximately 7 per year) are extremely popular, with visitors come to Culham from all over the world, and one who flew from the US. The May open evening is already over-booked.

Chris Carpenter continued by saying that we have approximately 2000 secondary 6<sup>th</sup> form students who visit each year. The Sundome, made under a special grant to buy all the equipment including the planetarium, visits primary schools around the country and has been outside the UK on several occasions. An independent consultant is reviewing the success of the project and once finalised the report will be made available to this committee. The report includes comments taken verbatim, and is universally positive and interesting. We have recently employed someone to assist with going out and giving the talks, without whom it would be difficult to continue the intense programme of Sundome visits. After this year a special grant will be required to support the continuation of this project and it is hoped that EPSRC will renew the grant. If not we will consider approaching an educational charity or seek funding assistance from elsewhere. The grant to set up the Sundome was modest.

**Action: Chris Carpenter to circulate Sundome review once available.**

John Stimson asked if the Sundome was covering all immediate parishes. Chris Carpenter replied that every school had been contacted by email, and the dome was travelling all over the county and just outside to places like Shrivenham, Faringdon and Reading. The dome has also been taken to a Public Information Officers meeting in Germany and was shipped to Florida where it was included in a major meeting which had a specific outreach programme. It also gave the opportunity to see what was happening elsewhere in educational outreach. There is now a thinking of adapting the Sundome for secondary school children. It currently targets Key stage 2 (10/11 year olds) and it is felt that the 15/16 year old students should be targeted. A level students already visit Culham.

David Turner commented on the open evening he attended in October 2007, and how impressed by the professionalism of the staff who took the visitors round. He felt the open evenings were very worthwhile.

Martin Cox returned to an update on safety. The safety performance over the last financial year had been very good. To give quantitative examples, the total recordable incident rate was one per million working hours and the ratio of lost time accidents of more than 3 days duration to hours worked is about one per 2 million working hours. Unfortunately this good record came to an end a few weeks ago when a plumber scalded his fingers trying to stop the flow from a hot water pipe feeding a sink, which he was convinced he had turned off before cutting the pipe but had not. Despite this recent event, Culham continues to have a good safety record and culture.

## **7. UKAEA Site Report – Mike Hurp**

Updates on site developments since the meeting held October 2007 were given by Mike Hurp.

Work continues on alterations within buildings D3 and K2 to accommodate an increase in staff numbers. The work is ongoing and involves the decanting of people from one area to the next whilst refurbishment is carried out. The work is expected to continue for a few months and includes accommodation for a small number of staff transferred from Harwell. Work has also been completed recently on the provision of further disabled facilities in the main conference centre.

As mentioned at the last meeting the project to demolish F1 on the western part of site has started (F1 is a redundant generator building in poor condition). The work is being carried

out in stages, involving first isolating the services around the building and checking for hazards.. This has been an extensive and time consuming job, as service ducts run under and around the building. The mechanical isolation of the building services has been completed and electrical isolations are now being looked at. Once the service isolations and survey work have been completed a tender exercise for the demolition contract will be carried out.

Further demolitions are being explored on the North Culham Estate (accessed from the western perimeter track). The buildings are approaching the end of their working lives and there is not much further use for them at Culham. They will be demolished as and when funds allow.

On the planning front, SODC have started consultation on the Local Development Framework process, the outcome of which will replace the current local plan that runs to 2011. A response has been made on the SODC core strategy paper highlighting Culham's employment and continuing role in supporting fusion R&D and science generally. As the process unfolds we will be looking to make further submissions with the aim of ensuring that the planning policies for the site remain appropriate for its long term role.

John Stimson suggested that the JSSG could be involved with the Local Development Framework process in the future.

On other planning issues, the planning applications that were awaiting a decision at the time of the last meeting have all been approved; the extension to building J30, two small pre-fabricated buildings for JET switchgear, and the change of use of building B3 which is now being used as an assembly area for JET diagnostic and test equipment.

On Commercial property, Verran Freight, who were based on the North Culham Estate, have moved off-site following the end of their lease. The consequence is that there has been a major reduction in heavy goods traffic to the site. The business network at Culham has built up, with a total of 31 companies now on site, from small companies to some significant occupants in science and technology. A further 19 start up companies are based in the Culham Innovation Centre.

On off-site issues, Culham are pleased with the restoration of the 5pm train service to Oxford. There had been indications that peak time bus services passing the site (the 140 from Abingdon) would be cut, but this threat seems to have gone away.

John Stimson commented that SODC recognised the importance of the JET site and asked if a local member had been involved in local framework of the JET Site. Mike Hurp replied that discussions with SODC officers had started..

## **8. Update from tenants**

Mr David De Leyser (Crystalox) was the only attendee from the tenants on site. He reported that Crystalox had enjoyed a good last twelve months.

## **9. Any other business**

Following on from the last meeting, John Stimson noted that Chris Carpenter wrote to South Oxford District Council inviting them to the CLLC meeting. A reply was received, but they asked for the constitution of the JSSG.

Laurel Symons asked how it would be possible to attract other tenants to attend the CLLC. It was suggested that tenants should be urged to attend the next meeting and possibly asked to give presentations on their work.

Chris Llewellyn Smith gave a personal note of thanks for the work of the JSSG and commented that he hoped the good relations between UKAEA Culham and the local community would continue.

David Turner replied, on behalf of the committee, that everyone had been grateful for the enthusiasm which Chris Llewellyn Smith had brought to Culham.

#### **10. Next meeting**

The next CLLC meeting will be Thursday 9<sup>th</sup> October 2008, following the JSSG.

Lisa Jones  
Secretary