

European Spallation Source-Initiative (ESS-I)

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The Hague, December 7th, 2004

Mr. Jean-Louis Picqué
Secretary of ESFRI
Unit RTD-B3
Square de Meeus (SDNE 1/60)
1049 Brussels
Belgium

Re: ESFRI meeting December 17, 2004

Dear Mr. Picqué,

I understand that at the forthcoming ESFRI meeting on December 17th ESFRI will consider also the situation in the field of neutron research as a subagenda-item under 'News'. It is my pleasure to submit to you an information note on this issue for consideration by the ESFRI members.

With best regards,

Peter Tindemans
Chairman ESS-Initiative

The situation with respect to a next generation European Spallation Source.

1. Investing in present top tier facilities, and planning for a next generation source.

Europe (or rather a number of European countries) are currently investing in improving the present top tier neutron sources: new instruments and infrastructure at ILL, the second target station at ISIS, the new reactor FRM-II in München. The future of LLB in Saclay seems to be secured for another ten years. Continuing with improvements in instruments, infrastructure, detectors and dataprocessing remains an important part of any strategy to remain competitive or in a leading position. But one should not close one's eyes to the fact that more powerful sources will apply similar technologies; moreover, experience shows that such sources challenge scientists and engineers to think of novel instrumentation concepts. Therefore planning for a next generation, that is a multi-MW, source must be a high priority issue on any European Large

Facilities Road Map. The technical and scientific work for such a source has to a large extent been carried out.

2. The European Spallation Source Initiative ESS-I.

Eight organisations and consortia have decided in October 2004 to establish the European Spallation Source Initiative ESS-I. Its purpose is to build on the work that has been done on ESS and prepare the case and the planning for a next generation neutron spallation source in Europe. The founding parties are ENSA for the users of neutron facilities, ILL, LLB (for CEA and CNRS) and FZJülich (possibly a consortium of the four German sources) as neutron facilities, and the Yorkshire and Scandinavian consortia, the German states Sachsen-Anhalt and Sachsen and Hungary as (regional) parties interested in hosting a new facility. Its main tasks are liaising with political and funding bodies in Europe, continuing working on the science case, following, advancing and possibly being involved in relevant technical areas (accelerator developments or target technologies), and linking to the US and Japanese developments.

ESS-I is based at ILL in Grenoble; information about ESS-I is at www.neutrons-eu.net.

With regard to the science case a workshop was organised by SNS-JINS, NMI3 together with ESS-I in June in Washington on neutrons and energy; next year there will be a workshop on neutrons and earth and environmental sciences; ESS-I is also involved in the GENNESYS initiative on nano-materials science and technology and synchrotron and neutron facilities.

3. USA and Japan.

The 1.4 MW SNS in Oak Ridge nears completion. The recent semiannual review by DoE has shown that the project is on time and on budget, and will begin operations in 2006 with full power in 2010 or 2011. End November DoE has approved planning for a power upgrade to between 2 and 4 MW. The Japanese source will most likely be operational (at lower power levels) in 2007 or 2008. This will define the competitive edge as of the next decade.

4. Developments in European countries.

The UK review process is scheduled to lead to first political conclusions in the middle of 2005. A Royal Society Committee will conduct the review for CCLRC.

The Swedish government has appointed a former finance minister, Mr. Larsson, a chief negotiator to investigate the benefits for Sweden and the support for a Swedish/Scandinavian bid to host a facility in Sweden.

The Hungarian government has, in a similar vein, requested its minister of Education to investigate benefits and support, as well as financial models. The time schedules for the Swedish and the Hungarian reviews also point to the middle of 2005.

Developments in France (with respect to LLB) and in Germany (the closing of two reactors the next few years) seem to imply a more balanced situation in Europe for the planning of a next generation European top tier facility.

5. Conclusion.

A number of developments that are now taking place in the area of neutrons appear to define the middle of next year as the time to try and come to first conclusions on the planning for a next generation spallation source. The preparations for the ESFRI Road Maps as well as the EU's FP7 point to a similar time schedule. Essential elements to bear in mind then have not changed since they have been mentioned to ESFRI last November: from decision to first operations takes 10 years; an agreement as early as possible on a common planning horizon is essential; any assessment is best being done at European level by ESF.

ESS-I will appreciate further engagement of ESFRI and looks forward to co-operate in order to advance in 2005 the situation with respect to the long-term future of neutron provision in Europe.