



29th April 2015

Dear colleagues,

You are receiving this letter because you are a user of the Laboratoire Léon Brillouin, and of its associated Orphée reactor [*] because you are, collaborating with one of its research teams or more widely, because you are somehow involved in the scientific life of the French national neutron source and keen to defend fundamental research and science. We have decided to alert you on the growing threat of an early phasing out of the operation of the Orphée reactor, whose consequences entail the French neutron community at large.

The 2014 report released by the national council for large-scale facilities, and reiterated by France's Minister for Higher Education and Research in response to a written question by a member of Parliament at the beginning of 2014, provides for continuation of the Orphée reactor operation till 2020 on the current basis of 180 days yearly, and states that the LLB itself will "continue to exist as a center of excellence" beyond 2020. However, persistent unofficial information is being received of delays, if not outright abandonment, of our next nuclear fuel procurement, implying an early shutdown in 2017 or, in the "best-case" scenario, a reduced operation schedule of 120 days yearly to reach 2019.

This strategy has no sound scientific basis as successive evaluation committees have reiterated the high quality of the LLB research programs and scientific output [**], despite blatant underfunding and understaffing in comparison with similar European and international facilities. The will to put an early end to the Orphée reactor is made only on the basis of short-term budgetary considerations and definitely not on scientific merit. The future operation of the LLB-Orphée has to be considered in the context of France's participation in the upcoming spallation neutron source (ESS), the building of which has just started in Lund (Sweden), and which is due to be fully operational no sooner than 2025. There is serious concern that the parent organizations CEA and CNRS, and ultimately the ministry for Higher Education and Research, may try to compensate for the momentary rising costs they will have to face by sacrificing the national facility.

This is obviously a very serious miscalculation. Investment in the ESS makes sense only if it is based on a dynamic community, apt to be the vector of innovating projects, with a proven expertise in the use of neutron techniques. This is a prerequisite if France is to hold a position in the ESS commensurate with its in-kind contribution. Other major European countries, namely Germany and the UK, have fully understood the key role of national sources. Their existing national facilities will run well beyond the start of ESS operations. A decommissioning is out of purpose. In France if nothing is done to change the present course, the lack of prospects offered to those currently committed to advancing neutron science and technology at the Orphée neutron source will inevitably lead to a breakup of the French community, compromising the future use of ESS by France.

We are calling for your support to convince national authorities to implement their commitment to securing the procurement of nuclear fuel, and to ensure the full power operation of Orphée at least

until 2020. The LLB-Orphée must have the necessary means, especially human resources, to keep playing its role for the benefit of the scientific community, while also contributing to the preparation of the ESS.

LLB directorate and staff personnel

(*) The Orphée reactor is the national French neutron source of the laboratoire Léon Brillouin (LLB), which performs neutron scattering experiments to investigate condensed and soft matters. The LLB and the Orphée reactor are jointly run by the Commissariat à l’Energie Atomique (CEA) and the Centre National de la Recherche Scientifique (CNRS).

(**) **Rapport AERES 2014:** “The visiting committee is concerned about the proposed shut down of ORPHÉE in 2020. Firstly, the French neutron community needs a local/national/easily accessible neutron source which serves as a learning/training/preparing source for getting access at the international leading neutron source, namely the ILL. Today about 60 % of all French neutron experiments are performed at LLB, 30 % at ILL and 10 % abroad. The visiting committee doubts that creating more French CRGs (*nb* : Collaborating Research Groups) at ILL can compensate for the loss of ORPHÉE. Further, first neutrons at ESS will not be available before 2021 and another five years are necessary to develop an acceptable international user service. Also from that perspective a closure of ORPHÉE in 2020 is premature; France weakens its competitiveness just at the moment when the supposed to be world’s best neutron source becomes available.”

Texte complet : <http://www.aeres-evaluation.fr/content/download/23601/362403/file/E2015-EV-0912281K-S2PUR150009187-006219-RD.pdf>

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