



Professor John Wood FEng  
Chief Executive, CCLRC

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Our ref JVV/kp/04/03/05

04 March 2005

Dear *Ken,*

You will be aware of the exciting possibility that a Neutrino Factory could be provided by **developing the infrastructure available** at the Rutherford Appleton Laboratory. The scientific merit of the broad scientific programme that could be carried out at such a facility is widely recognised and the Neutrino Factory is on the OST's Large Facilities Roadmap as well as the Roadmaps of CCLRC and PPARC.

While several schemes for the accelerator complex have been proposed, a full conceptual design for the facility will take a dedicated team a number of years to complete. It is clear that the full engagement of the international Neutrino Factory community in this endeavour is essential. Within Europe, the Design Study call that is expected to be included in Framework Programme 7 could be exploited to provide some of the resources required. I suggest that the conceptual design be carried out in two phases. The first phase should be completed in a twelve-month period and take the form of a 'scoping study' in which the various options are reviewed and international consensus on the elements to be included in the full design study established. The full design study would be carried out in the second phase. Ideally, the first phase should be initiated at the NuFact05 workshop which takes place in June this year. A report laying out the conclusions of the first phase and the specification of the second-phase programme should be presented to and agreed by the Neutrino Factory community and NuFact06.

For CCLRC to consider acting as 'host' for the scoping study, I would like to ask the UK Neutrino Factory (UKNF) collaboration to consider how best to establish an international effort that will:

- Review the physics case for the Neutrino Factory with a view to defining the baseline specification for the facility;
- Review the options for the accelerator complex with a view to defining a baseline, agreed among the various interested parties, that can form the basis of the full design study;



- Review the options for the neutrino-detection systems that such a facility would require with a view to defining a baseline set of options that can form the basis for further study;
- Define the simulation, design and hardware development programmes that will be required to produce a robust conceptual design by the end of the decade.

A short document defining how such a 'scoping study' could be carried out should be submitted to me by the 27<sup>th</sup> May 2005. The document should describe the proposed organisation of the study, indicate how the international community will be integrated into the work and identify the resources required for the scoping study to be successfully concluded in one year.

Yours sincerely

A handwritten signature in black ink, appearing to be 'J V Wood', written in a cursive style.

Professor J V Wood  
Chief Executive