

Fermilab as an International Laboratory

1. Introduction

We start by assuming that at some future date there is an agreement to build an international linear collider, and that it will be sited at, or close to, Fermilab, which will be the "host laboratory". The issue to be examined here is what changes will be necessary at the Laboratory. It should be stated at the outset that few answers will be given; rather, there will be several issues posed and a few examples of current procedures listed which will need to be changed in order to make the Lab international, but without specific solutions.

One reason why it is not possible to write down solutions now to all of the problems that will need to be solved before Fermilab becomes an international laboratory is that many of the issues will be the subject of the negotiations between the governments which agree to collaborate and fund the construction and operation of a linear collider. There will be many inputs to these negotiations, which are likely to be lengthy and complex; while scientists may influence the resulting decisions, they are less likely to have the final word.

2. Previous Activity on Organizational Issues for an International Linear Collider Laboratory

Many groups around the world are studying how an international linear collider laboratory will be organized. Among them are ECFA, ACFA and the US Linear Collider Steering Committee. Available for some time is a June 2002 report from the OECD Global Science Forum, "Report of the Consultative Group on High-Energy Physics", at

<http://webnet1.oecd.org/dataoecd/2/32/1944269.pdf>

The Consultative Group is composed of government science officials at the level approximately of the DOE's Associate Director for High Energy and Nuclear Physics, together with some scientists invited by their governments (e.g. Fred Gilman as Chair of HEPAP), and representatives of some scientists' and other organizations (CERN, ICFA, ECFA, etc.). The report referred to above makes the case for a linear collider to the OECD governments, and contains a section "Organizational and Managerial Issues Associated with Creating a Major New International High-Energy Physics Facility".

An ECFA report on linear collider organization and managerial issues is available at ECFA-SGOM/4.7.1 (July 7th, 2003); an ACFA report is at

http://lcdev.kek.jp/GLCC/glcc_report.pdf.

This present discussion will use the Consultative Group report as a starting point for considering what will be needed for Fermilab to become an international laboratory.

3. US as a Host to an International Science Laboratory

There is no experience of having an international science laboratory in the US. A few years ago, discussions were started on this issue when US participation in the ITER project was first under discussion, and a site in this country might be a possibility. However, significant progress was not made towards this goal before the US withdrew from the project. (The US has subsequently become involved with ITER again, but a US site is not under consideration at present).

There is experience with the US hosting an international organization; the United Nations is one example. Whether such organizations can serve as an example for an international linear collider laboratory is not obvious.

The chapter on organizational issues of the OECD Consultative Group report, referred to earlier, has sections with the following headings: Legal Basis of the

Project; Management; Special Role of Host Laboratory/Host Country; Key Personnel; General Personnel Provisions; Financial Provisions; Procurement Practices; Accelerator/Detector(s) Interface; Further Topics; Initiating International Negotiations; Conclusions. Many of the issues raised will be the subject of the international negotiations leading to the laboratory establishment. We address only a few of the issues where current US/DOE/Fermilab practices would very likely require some modification, to give some idea of the issues which will arise.

4. Some Areas Where Changes Will be Necessary

- A. A new international council will have to be formed to oversee the laboratory (essentially replacing the URA Board of Overseers?) composed of representatives of the collaborating governments, with number of members per country (or groups of countries, or existing international organizations) to be determined in the negotiations leading to the new international accelerator. This council, to which the Fermilab Director will report, may need a legal identity in the US in order for it to hold funds, enter into contracts, etc.
- B. At present DOE can deny anyone access to the Fermilab site. It is very likely that the countries collaborating on a linear collider may want to consider whether this "veto" should be retained.

- C. Over the past few years, the ease with which non-US scientists can enter the US in order to carry out research at Fermilab has been reduced significantly. Long delays in visa issuance, and visa denials, are becoming more frequent. Even before 11 September 2001 there were problems, with no US visa being appropriate for the visit frequency, visit duration, and the need for visits to extend over the sometimes decades of an experiment's lifetime. There are also difficulties for accompanying family members who wish to be employed in the US.

In August 2001, Fermilab proposed a new US visa for scientists to collaborate on international scientific experiments at US national labs which would allow the types of visit length, frequency, and family provisions that would be necessary. Although the Fermilab proposal has been studied at the US State Department and OSTP, recent security concerns have made the introduction of such a new, less restrictive, visa type unlikely in the current situation. However, some US visa changes, perhaps along the lines of the Fermilab proposal, will be essential in order for linear collider international personnel to access Fermilab without the delays and denials currently evident.

5. Other Changes

Fermilab as an international laboratory will presumably still have to adhere to many Illinois and US laws on such items as environmental concerns.

There are many US regulations to which Fermilab is subject that would cause difficulties if the Laboratory were to become an international organization. They would presumably be subjects of the negotiations between the governments forming the international collaboration which will build and operate the facility. Two (of many) examples can be given.

1. The Davis-Bacon Act. Wages are defined for workers engaged in activities that fall under a definition of construction.
2. The Buy-America Act. US goods must be bought by Fermilab unless a competing non-US supplier quotes a price some defined amount below the US price.

Many more examples could be given. Other items needing study would include such things as intellectual property rights, wages and benefits to non-US personnel sent by collaborating countries to work on the accelerator or detectors, and US import/export restrictions on equipment for the facility.

5. Conclusions

Many changes will be needed before Fermilab can be considered an international laboratory in order for it to host an international linear collider. They will be part of the international government negotiations leading to the agreement to site an international linear collider here. In order for an international science facility to operate efficiently in the US, many exceptions to existing US government regulations will be necessary.