

DRAFT
8/31/2003

Charge to the
Ad Hoc Science Committee for the
Proposed Laboratory for Science and Engineering at Homestake

Several proposals have been made for a new deep underground science and engineering research facility in the United States. Three such proposals were submitted to the National Science Foundation, each with similar goals but located at three different sites. The NSF decided, based on the status of proposals in May 2003, that the Homestake Mine in Lead SD is the preferred site. Mining operations at Homestake stopped at the end of 2001 and transfer of the mine from the Barrick Gold Corporation to the state of South Dakota is being negotiated. The scientific proponents of the Homestake site submitted a detailed Project Book to the NSF in August 2003. This Project Book describes a base plan for the conversion of the Homestake Mine to a laboratory.

The purpose of this Committee is to provide a venue for scientific input and discussion regarding the Homestake Mine conversion and the development of a vigorous program of deep underground science and technology.

1. Requirements Document. The Requirements Document summarizes the requirements the scientific and engineering program will place on the design and operations of the facility. It will allow the NSF to verify that the facility proposed in the Project Book will meet the community's needs (and to suggest changes in the proposal if it does not). Similarly it will help South Dakota negotiate a site transfer and use agreement consistent with the community's proposed use of the site. The committee will draft a requirements document, circulate it broadly in the science and engineering community, and refine the document based on comments received.
2. Experimental program. Comment on the proposed experimental program and educational and outreach program at the laboratory.
3. Scientific Program. Provide your view of the scope and timescale of programs needed for the support of experiments, theory, and research and development. Also comment on the support needed for experiments at other underground laboratory facilities.
4. National security is expected to be an important activity and is expected to require secure areas. Provide your view on mechanisms to maintain free and open access by other users to their apparatus, while still meeting the requirements for secure activities.
5. Management Plan. The Project Book contains a suggested management plan for the laboratory. The committee will be asked to comment on the adequacy of this plan, and to suggest possible improvements. The management plan must define a mutually satisfactory relationship between the NSF, as the responsible federal agency; the scientific manager, which will operate the laboratory under a cooperative agreement with the NSF and a use agreement with the State; and the State of South Dakota, the proposed

site landlord. Careful consideration must be given to environmental and safety issues where laboratory manager and state (as guarantor of public safety and as site landlord) responsibilities overlap.

6. Other Laboratories. Comment on the relationship with other laboratories such as Soudan and WIPP in the US and SNO, Gran Sasso and Kamiokande abroad.