STRATEGIC LABORATORY MISSIONS PLAN—PHASE I

Preface

The Laboratory Operations Board is pleased to release Phase 1 of the Strategic Laboratory Missions Plan. The plan represents a major new resource and management tool for the Department of Energy (DOE) and its laboratories. It will help the Department sharpen the strategic focus of the laboratories in service to the Nation, while contributing to the Department's efforts to cut cost and improve performance at the laboratories.

The document dissects the Department's research and development (R&D) into its many mission-directed parts and shows how these parts help determine the roles and responsibilities of the various DOE laboratories. As such, this document represents the first-ever description of how the Department's missions are carried out through its laboratories, academia, and the private sector. The plan helps answer the basic question of how the Department uses its laboratories in furtherance of its missions and why.

The Department of Energy's laboratories are widely recognized to be among the world's premier scientific and technical institutions. In recent years, however, with the end of the cold war and ever-tightening Federal budgets, there have been increased concerns about the continued viability of the laboratories' missions and size, and questions about their efficiency. In its 1995 report, the Task Force on Alternative Futures for the Department of Energy National Laboratories (the "Galvin" report), established by the Secretary of Energy, found that the laboratories have compelling missions but that they need a more disciplined focus on their mission research, need to cut costs—especially with regard to administrative functions—and need an improved system of governance. In response, the Department committed itself to a process to improve the mission focus, governance, and cost-effectiveness of the laboratories.

As part of this process, the Department established the Laboratory Operations Board in April 1995 to ensure that dedicated management attention, including private-sector input, is provided on a continuing basis to issues involving the cost and performance of the Department's laboratories. The Board consists of

the Department's senior managers who bear responsibility for the laboratories, as well as external members with broad expertise in both industry and government. The external members provide advice as individuals to the Board, and also report separately as a group to the Secretary of Energy Advisory Board.

For efforts to reform the laboratories to succeed and endure, however, they must involve a partnership that includes not only the Department and its laboratories, but also the Administration, Congress, and other stakeholders. We believe such a partnership can succeed only if there is a common understanding of how the laboratories function today, and a common vision of what their role should be tomorrow. The goal of this document is to help build this common understanding and vision.

This in itself is an ambitious task. The Department and its laboratories are a complex enterprise, with diverse missions that require different management approaches. Some elements of the Department perform fundamental scientific research; others develop specific technologies for government customers. In some missions, national security requires that the work be performed inside government-owned labs; other missions benefit from maximum interaction with universities and industry. Many people perceive only part of the Department and its laboratories, and they incorrectly generalize those perceptions to the entire enterprise. Recommendations to improve the enterprise often are based on an inadequate understanding of the whole.

To provide a common basis for improving the laboratories and their management, this document describes the current vision for the laboratories and management principles for the Department to follow. It has been prepared with substantial input and guidance from the external members of the Board acting as individuals. The document describes the outcomes the Department seeks to achieve in each of its mission areas, and shows how the Department uses the laboratories as well as universities and industry to achieve those outcomes.

This document is only one element of the process of reforming the Department's management of the laboratories. It describes the laboratories as they are, and says what they should be. This is a first, necessary step to better managing the Department's programmatic use of the laboratories.

The next step—Phase II—will move the Department and its laboratories toward the vision for the laboratories that is outlined in the plan. This vision is currently evolutionary in nature and reflects near-term expectations for the laboratories. In this view, the laboratories should have focused roles and should work in a coordinated way to achieve the Department's missions. Moreover, they should maintain the highest standards of excellence in science and technology and be well-integrated, highly efficient, and cost-effective elements of the Nation's overall R&D enterprise. In Phase II, this vision will evolve into a longer term vision with specific outcomes.

As described in this report, one way to move the laboratories toward the vision is through the management decisions made by the leaders of the Department's R&D programs. Each of the Department's multiprogram laboratories is shaped by decisions made in many different R&D programs in the Department. The way each program chooses to focus its R&D efforts among various R&D performers directly influences the degree of mission focus in the laboratories. The way each program seeks to ensure quality in R&D and bases funding decisions on considerations of cost-effectiveness determines the incentives the laboratories have to maintain quality and improve their effectiveness. It is ultimately the quality of these decisions, along with the quality of laboratory leadership in response to the environment set by the Department, that determines the effectiveness of the Department's laboratories.

The next steps for the Department and the Laboratory Operations Board will be to review in detail the key management processes in the Department that shape the laboratories. This will include four related sets of reviews. By November 1, 1996, the Board will review the Department's R&D programs with regard to their rationale for the mix of R&D performers (DOE laboratories, universities, or industry) that they use to carry out their missions. These reviews will examine whether work would be more effectively performed if concentrated at a smaller number of R&D performers and whether R&D programs could make better use of capabilities in universities and industry. These reviews will, to the extent possible, build on existing studies and reviews and will focus on the areas that need the most attention. The Board will report on the results of these reviews and identify actions that are needed.

In a second set of reviews, the Board will examine the Department's small, mission-specific laboratories to validate their roles or, relatedly, determine if they are candidates for privatization, alternative contracting mechanisms, or closure. Further action will be taken on such candidates during the next year. In the third set of reviews, the Department and the Board will also examine the institutional and strategic plans for the multiprogram laboratories to determine how these may better contribute to the needs of the Department.

Finally, the external members of the Board will document and review the mechanisms used throughout the Department for evaluating the scientific and technical merit of the work at the laboratories. These mechanisms include advisory committees to various DOE programs, advisory boards to laboratory directors as well as programs within laboratories, and peer review panels established for evaluating specific proposals. The reviews will determine how the existing system compares to that of other governmental R&D organizations and the extent to which changes may be needed.