

**U.S. Department of Energy**  
**Washington, D.C.**

**ORDER**

**DOE O 413.2**

Approved: 03-05-97  
Sunset Review: 03-05-99  
Expiration: 03-05-01

**SUBJECT: LABORATORY DIRECTED RESEARCH AND DEVELOPMENT**

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1. **OBJECTIVE.** To establish the Department's requirements for laboratory directed research and development (LDRD) while providing the laboratory director broad flexibility for program implementation. The objectives of the LDRD program are to:
  - C maintain scientific and technical vitality of the laboratories
  - C enhance the laboratories' ability to address future DOE missions
  - C foster creativity and stimulate exploration of forefront science and technology
  - C serve as a proving ground for new research; and
  - C support high-risk, potentially high-value R&D.
2. **CANCELLATION.** DOE 5000.4A, LABORATORY DIRECTED RESEARCH AND DEVELOPMENT, of 4-9-92.
3. **APPLICABILITY.** The provisions of this Order apply to those DOE elements that direct, monitor, or utilize the Department's laboratories (listed in Attachment 1) and to the contractors operating these laboratories (see Attachment 2, Contractor Requirements Document), as provided by law and/or contract, and as implemented by the appropriate contracting officer or authorized Department of Energy (DOE) designee.
4. **REQUIREMENTS.**
  - a. LDRD projects shall be in the forefront areas of science and technology. The LDRD projects normally shall be relatively small and should also include one or more of the following characteristics.

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**Distribution:**  
All Departmental Elements

**Initiated by:**  
Office of Energy Research

- (1) Advanced study of hypotheses, concepts, or innovative approaches to scientific or technical problems.
  - (2) Experiments and analyses directed towards "proof of principle" or early determination of the utility of new scientific ideas, technical concepts, or devices.
  - (3) Conception and preliminary technical analyses of experimental facilities or devices.
- b. LDRD projects normally shall be limited to a maximum period of performance of 36 months. Exceptions may be granted by the Cognizant Secretarial Officer (CSO) or authorized DOE designee.
- c. The maximum funding level established for LDRD shall not exceed 6 percent of the laboratory's total operating budget, including non-DOE funded work, for the year, plus an amount of capital equipment funds not to exceed 6 percent of its total capital equipment budget for the year. The system for accrual of these funds shall, to the extent reasonable, provide for equitable pro rata contributions by all sources of operating and capital equipment funding.
- d. LDRD expenditures shall be considered an allowable cost in accordance with the terms and conditions of the laboratory operating contract and shall be identified in the laboratory accounting system.
- e. LDRD funds will not be used to:
- (1) Substitute for or increase funding for any tasks for which a specific limitation has been established by Congress or the Department, or for any specific tasks that are funded by DOE or other users of the laboratory.
  - (2) Fund projects that will require the addition of non-LDRD funds to accomplish the technical goals of the LDRD project.
  - (3) Fund construction design beyond the preliminary phase (e.g., conceptual design, Title I design work, or any similar or more advanced design effort) or to fund construction line-item projects, in whole or in part.
  - (4) Fund general purpose capital expenditures with the exception of acquisition of general purpose equipment that is clearly required for the project and is not otherwise readily available from the laboratory inventory.

- f. The LDRD program shall:
  - (1) Include all discretionary research and development activities other than those provided for in a DOE program or by specific designation in a DOE contract.
  - (2) Be consistent with all other applicable requirements.

5. RESPONSIBILITIES.

a. Director, Office of Energy Research.

- (1) Performs periodic review of the LDRD Order and its implementation in cooperation with cognizant Departmental elements and recommends revisions, as required.
- (2) Ensures that the overall LDRD program is consistent with the institutional planning process, which includes the laboratory appraisal process.

b. Cognizant Secretarial Officers.

- (1) Exercise general oversight of all activities related to LDRD at the laboratories for which they have cognizance, including establishing guidelines as required to fully and efficiently implement the requirements of this Order.
- (2) Annually approve the laboratories' LDRD plans and allowable funding levels and grant exceptions as required under paragraph 4b.
- (3) Review each laboratory's LDRD program with the assistance of the appropriate DOE Operations Office Manager.

c. Operations Offices Managers.

- (1) Assist the CSO in providing oversight and review of the laboratory's LDRD program.
- (2) Provide a recommendation on the laboratory's proposed annual LDRD plan and funding level.

- (3) Annually review and certify in writing to the CSO that the laboratory's method for accumulating LDRD funds is consistent with paragraphs 4c. and 4d. of this Order.

## 6. REFERENCES.

- a. The Atomic Energy Act of 1954, as amended, Title 42 United States Code (U.S.C.) 2013, 2051, and 2053, which provides broad authority for research and development activities and their funding.
- b. The Energy Reorganization Act of 1974, as amended, Public Law 93-438, 42 U.S.C. 5801(b), 5813, and 5817(a), which created the Energy Research and Development Administration (ERDA) to bring together and direct Federal activities relating to research and development on the various sources of energy and to carry out general basic research activities.
- c. The Department of Energy Organization Act, as amended, Public Law 95-91, 42 U.S.C. 7111(4) and 7112(5), which places the research and development activities formerly performed by the Atomic Energy Commission and ERDA under the Secretary of Energy, and directs the Department to carry out the planning, support, and management of a comprehensive energy research and development program.
- d. An Act to authorize appropriation to the ERDA for Fiscal Year 1977, Public Law 95-39, which provides specific authority so that the Director of a Government-owned, contractor-operated laboratory may use a reasonable amount of the laboratory's operating budget to fund employee-suggested projects up to the pilot stage of development, with the approval of the Secretary.
- e. The National Defense Authorization Act for Fiscal Year 1991, Public Law 101-510, 42 U.S.C. 7257a and 3132, which authorizes Government-owned, contractor-operated laboratories that are funded out of funds available to the Department of Energy for national security programs (i.e., Atomic Energy Defense Activities) to carry out LDRD, not to exceed 6 percent of such funds, for the purpose of maintaining the vitality of the laboratory in defense-related scientific disciplines.
- f. The National Defense Authorization Act for Fiscal Year 1993, Public Law 102-484, 42 U.S.C., 7261b, 3135, which directs that funds authorized to be appropriated to the Department of Energy for Atomic Energy Defense Activities and made available for LDRD shall be made available for cooperative research and development agreements or other arrangements for technology transfer.

7. CONTACT. Questions covering this Order should be addressed to the Office of Laboratory Policy and Infrastructure Management, Office of Energy Research, (202)586-5447.

BY ORDER OF THE SECRETARY OF ENERGY:



ARCHER L. DURHAM  
Assistant Secretary for  
Human Resources and Administration

CANCELED

Attachment 1

APPLICABLE LABORATORIES

<u>List of Applicable Laboratories</u>	<u>Cognizant Secretarial Officer</u>
Ames Laboratory	Energy Research
Argonne National Laboratory	Energy Research
Brookhaven National Laboratory	Energy Research
Idaho National Engineering and Environmental Laboratory	Environmental Management
Lawrence Berkeley National Laboratory	Energy Research
Lawrence Livermore National Laboratory	Defense Programs
Los Alamos National Laboratory	Defense Programs
Oak Ridge National Laboratory	Energy Research
Pacific Northwest National Laboratory	Energy Research
Sandia National Laboratories	Defense Programs

## **ATTACHMENT 2**

### **CONTRACTOR REQUIREMENTS DOCUMENT**

Contractors shall fulfill the following requirements.

1. Establish and maintain a management system to ensure that the LDRD program meets the requirements in paragraph 4. of this Order.
2. Establish criteria for selection of projects, utilizing internal peer and/or scientific management review, that emphasize innovative scientific and technological excellence. A significant number of the projects selected should be those independently proposed by individual researchers or small multidisciplinary teams.
3. Submit an annual LDRD program plan for approval to the Cognizant Secretarial Officer (CSO) and the appropriate Department of Energy (DOE) Operations Office Manager at least 45 days before the start of the fiscal year. The plan shall provide a requested funding level, general description and justification of the LDRD program, and explain how this program will meet laboratory needs, support the laboratory's mission, and benefit the Department and the Nation.
4. Submit an annual written report on the laboratory's LDRD activities to the CSO and appropriate DOE Operations Office Manager within 6 months after the end of the fiscal year. The annual report shall include a technical and financial overview of the program as well as a short summary of each funded project. Additionally, each laboratory will provide a report on completed projects to the Office of Scientific and Technical Information.
5. Collect and provide data on LDRD projects as negotiated with the CSO.
6. Lead or participate in LDRD program reviews consisting of laboratory presentations on their management system, program philosophy, program implementation, performance measures, as well as the business and technical aspects of the program.
7. Submit requests for exceptions to the maximum 36 month performance period for an LDRD project to the CSO or authorized DOE designee.
8. Evaluate the quality of science and technology of the LDRD program.