

DOE 5000.4A  
4-9-92

THIS PAGE MUST BE KEPT WITH DOE 5000.4A, LABORATORY DIRECTED  
RESEARCH AND DEVELOPMENT.

DOE 5000.4A, LABORATORY DIRECTED RESEARCH AND  
DEVELOPMENT HAS REVISED DOE 5000.4 TO REFLECT  
ORGANIZATIONAL TITLE AND ROUTING SYMBOL EDITORIAL  
CHANGES REQUIRED BY SEN-6D-91. NO SUBSTANTIVE  
CHANGES HAVE BEEN MADE. DUE TO THE NUMBER OF  
PAGES AFFECTED BY THE REVISIONS, THE ORDER HAS  
BEEN ISSUED AS A REVISION.



# U.S. Department of Energy

Washington, D.C.

## ORDER

---

DOE 5000.4A

---

4-9-92

SUBJECT: LABORATORY DIRECTED RESEARCH AND DEVELOPMENT

- 
1. PURPOSE. To establish the Department's policy and guidelines regarding Laboratory Directed Research and Development (LDRD) at its multiprogram laboratories.
  2. CANCELLATION. DOE 5000.4, LABORATORY DIRECTED RESEARCH AND DEVELOPMENT, of 2-28-91.
  3. SCOPE. The provisions of this Order apply to all Departmental Elements which direct, monitor, or utilize the Department's multiprogram laboratories and to the contractors operating these laboratories for the Department, as provided by law and/or contract, and as implemented by the appropriate contracting officer.
  4. BACKGROUND. Independent and internal reviews of the DOE multiprogram laboratory system have consistently recommended that the laboratory directors be allowed flexibility to select and conduct a limited number of research and development projects to exploit creative and innovative concepts. Such discretionary research and development is critical in maintaining the scientific excellence and vitality of the laboratories. Reviews have suggested that each laboratory should have a formal internal peer and/or scientific management review and selection process based on uniform Departmental criteria and guidelines which emphasize scientific and technological merit, and subject to adequate DOE oversight to ensure all funds are used appropriately.
  5. REFERENCES.
    - a. DOE 5000.1B, INSTITUTIONAL PLANNING BY MULTIPROGRAM LABORATORIES, of 4-9-92, which establishes the policies and responsibilities for the Department's principal oversight process for its multiprogram laboratories.
    - b. DOE 5000.2B, MULTIPROGRAM LABORATORY APPRAISALS, of 4-9-92, which establishes the policies and responsibilities for appraising the performance of the Department's multiprogram laboratories.
    - c. 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.
    - d. 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

---

**DISTRIBUTION:**

All Departmental Elements

**INITIATED BY:**

Office of Energy Research

together and direct Federal activities relating to research and development on the various sources of energy and to carry out general basic research activities.

- e. The Department of Energy Organization Act, as amended, Public Law 95-91, 42 U.S.C, 7111 (4), 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.
- f. An Act to authorize appropriations to the Energy Research and Development Administration 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.

6. DEFINITIONS.

- a. Laboratory Directed Research and Development (LDRD) is research and development work of a creative and innovative nature which is selected by the laboratory director, or his or her designee, for the purpose of maintaining the scientific and technological vitality of the laboratory and to respond to scientific and technological opportunities in conformance with the guidelines in this Order. This LDRD includes activities previously defined as ER&D as well as other discretionary research and development activities not provided for in a DOE program.
- b. Cognizant Secretarial Officer is a Secretarial Officer responsible for management oversight of a multiprogram laboratory as delineated in DOE 5000.1B.
- c. Laboratory Appraisal is an annual evaluation of multiprogram laboratory management performance conducted in accordance with DOE 5000.2B.

7. POLICY.

- a. It is the policy of the Department to permit each multiprogram laboratory to carry out a limited amount of basic and applied research and development which focuses on early exploration and exploitation of creative and innovative concepts selected at the discretion of the laboratory director. The purpose of this policy is to enhance the ability of the laboratories to address the future mission objectives of the Department. This is accomplished by providing the laboratories with the flexibility to support new science and technology ideas to determine their worth and a

mechanism which is a major factor in achieving and maintaining staff excellence. The LDRD program provides the multi program laboratories with an opportunity to fund new and highly innovative research activities.

- b. The level of allowable funding which may be expended by each laboratory will be established annually in accordance with the requirements of this Order. However, the level so established shall not exceed an amount of operating funds equivalent to 6 percent of its 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.
- c. The annual level of LDRD funding will be based not only on how well the laboratory manages the LDRD program, but also on overall laboratory management performance.
- d. The Department will exercise effective oversight of the laboratories' LDRD program and integrate review of the program with the Institutional Planning Process.

8. RESPONSIBILITIES AND AUTHORITIES.

a. The Secretary.

- (1) Establishes the Department's policy on LDRD.
- (2) Approves the laboratories' LDRD Plans and the allowable funding levels recommended by the Cognizant Secretarial Officers.

b. Director of Energy Research ensures that the LDRD program is integrated with the Institutional Planning Process which includes the multi program laboratory appraisal process. The Director carries out for the Office of the Secretary, or by request of the Cognizant Secretarial officer, periodic review of the LDRD policy and its implementation (in cooperation with appropriate Departmental Elements) and recommends revisions, as required.

c. Cognizant Secretarial Officers.

- (1) Exercise general oversight of all activities related to LDRD at the laboratories for which they have cognizance.
- (2) To ensure adequate compliance with the requirements of this Order, annually conduct a review, with the assistance of the appropriate DOE Field Office Manager, of each laboratory's LDRD

activities, including each laboratory's LORD management system, as well as the results of the program.

- (3) Establish such additional procedures and/or guidelines as are required to fully and efficiently implement the requirements of this Order. These may be tailored to their Headquarters organizations, to the pertinent DOE Field Offices, and to the laboratories for which they have cognizance.
- (4) Annually establish for each laboratory, a level of resources which may be expended on LORD for the next fiscal year. The determination of this level will be based in part on a plan proposed and submitted by the laboratory director through the cognizant DOE Field Office Manager, and in part on the results of the most recent review of the laboratory's LDRD program. The plan shall provide a general description and justification of the LORD program, and explain how this program will meet laboratory needs, support the laboratory's mission, and benefit the Department and the Nation. Additionally, on the premise that the effectiveness of the LORD program is forecast by the overall effectiveness of the laboratory's management, the determination will also be based on the most recent laboratory annual appraisal.
- (5) Provide the laboratories' LDRD plans and the recommended maximum allowable funding levels and rationale to the Secretary for approval.

d. Managers of DOE Field Offices.

- (1) Provide an evaluation of the laboratory's LORD activities and processes to the Cognizant Secretarial Officer and any other information, as necessary, to assist the Cognizant Secretarial Officer in the annual review of each laboratory's LORD program.
- (2) Annually review and certify in writing to the Cognizant Secretarial Officer that the laboratory's method for accumulating LORD funds meets the requirements of this Order.
- (3) Conduct such additional reviews of each laboratory's LDRD activities as are necessary to ensure that each laboratory is complying with the requirements of this Order as well as the requirements of the laboratory's LORD management system.

9. LDRD GUIDELINES.

- a. Selection of Projects. Each laboratory will establish a defined process, utilizing internal peer and/or scientific management review, with selection criteria which emphasize scientific and technological excellence. A significant portion of the projects

selected should be those independently proposed by individual researchers or small multidisciplinary teams. As noted in paragraph 8d above, the DOE Field Office Manager will provide an evaluation of the laboratory's LDRD processes for review by the Cognizant Secretarial Officer.

b. General characteristics of LDRD Projects.

- (1) Projects, normally relatively small, in the forefront areas of basic and applied science and technology for the primary purpose of enriching laboratory capabilities.
- (2) Advanced study of new hypotheses, new concepts, or innovative approaches to scientific or technical problems.
- (3) Experiments and analyses directed towards "proof of principle" or early determination of the utility of new scientific ideas.
- (4) Conception and preliminary technical analysis of experimental facilities or devices.

c. Length of Projects. LDRD projects normally will be limited to a maximum period of funding of 3 years. Exceptions may be granted by the Cognizant Secretarial Officer, but such extensions will be treated de novo (i.e., any project in for extension beyond 3 years must be reviewed as if it were a new project).

d. Appropriate LDRD Expenditures. 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. With the exception of the restrictions listed in paragraph 9e below, funding of LDRD projects may include all costs normally associated with similar research and development activities of the laboratory such as travel in direct support of a project, capital equipment in direct support of a project, or support for participation by non-laboratory personnel.

e. Restrictions. LDRD funds may 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 LDRD projects that will require the addition of non-LDRD funds in order to reach a useful stage of completion.

- (3) Fund construction design beyond the preliminary phase (e. q. conceptual design, Title I design work, or any similar or more advanced design effort may not be supported).
  - (4) Fund construction line-item projects, in whole or in part.
  - (5) Fund capital expenditures of a general purpose nature with the exception of acquisition of general purpose equipment which is clearly required for the project and is not otherwise readily available from the laboratory inventory.
- f. Reporting Requirement. Each laboratory shall submit an annual written report on its LDRD activities to the Cognizant Secretarial Officer through the appropriate DOE Field Office Manager. 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 reports to the Office of Scientific and Technical Information.

BY ORDER OF THE SECRETARY OF ENERGY:



JOHN J. NETTLES, JR.  
Director of Administration  
and Human Resource Management