



U.S. DEPARTMENT OF
ENERGY

Fiscal Year 2016
Report to Congress on
Laboratory Directed
Research and Development
at the DOE National
Laboratories

Report to Congress

United States Department of Energy

Washington, DC 20585

Message from the Chief Financial Officer

As requested in the Fiscal Year (FY) 2001 Energy and Water Development Appropriations Conference Report (H. Rpt. 106-988), the Department of Energy (DOE) is submitting a *Report on Laboratory Directed Research and Development (LDRD) for FY 2016*. The report provides the FY 2016 LDRD expenditures by laboratory and weapons production plant, as well as information on the impact and importance of the LDRD Program in advancing the diverse missions of the Federal Government.

In FY 2016, 1,788 LDRD projects at the DOE national laboratories cost \$565.5 million. The Report also includes information on DOE's Plant Directed Research, Development and Demonstration, and the Site Directed Research, Development and Demonstration Programs.

This report is being provided to the following Members of Congress:

- **The Honorable Harold Rogers**
Chairman, House Committee on Appropriations
- **The Honorable Nita M. Lowey**
Ranking Member, House Committee on Appropriations
- **The Honorable Mike Simpson**
Chairman, House Subcommittee on Energy and Water Development, Committee on Appropriations
- **The Honorable Marcy Kaptur**
Ranking Member, House Subcommittee on Energy and Water Development
- **The Honorable Thad Cochran**
Chairman, Senate Committee on Appropriations
- **The Honorable Barbara Mikulski**
Vice Chairwoman, Senate Committee on Appropriations
- **The Honorable Lamar Alexander**
Chairman, Senate Subcommittee on Energy and Water Development, Committee on Appropriations
- **The Honorable Dianne Feinstein**
Ranking Member, Senate Subcommittee on Energy and Water Development
- **The Honorable John McCain**
Chairman, Senate Committee on Armed Services

- **The Honorable Jack Reed**
Ranking Member, Senate Committee on Armed Services
- **The Honorable Jeff Sessions**
Chairman, Senate Subcommittee on Strategic Forces
- **The Honorable Joe Donnelly**
Ranking Member, Senate Subcommittee on Strategic Forces
- **The Honorable Mac Thornberry**
Chairman, House Committee on Armed Services
- **The Honorable Adam Smith**
Ranking Member, House Committee on Armed Services
- **The Honorable Mike Rogers**
Chairman, House Subcommittee on Strategic Forces
- **The Honorable Jim Cooper**
Ranking Member, House Subcommittee on Strategic Forces

If you have any questions or need additional information, please contact me or Mr. Joseph Levin, Associate Director of External Coordination, at 202-586-3098.

Sincerely,


For Joseph S. Hezir

Executive Summary

As requested in the FY 2001 Energy and Water Development Appropriations Conference Report (H.R. 106-988), the Department of Energy (DOE) has prepared a *Report on Laboratory Directed Research and Development (LDRD) for FY 2016*. The report provides the FY 2016 LDRD expenditures by laboratory, as well as information on the impact and importance of the LDRD Program in advancing the diverse missions of the Federal Government. The Report also includes information on DOE's Plant Directed Research, Development and Demonstration, and the Site Directed Research, Development and Demonstration Programs by weapons production plants.

In FY 2016, 1,788 LDRD projects at the DOE national laboratories cost \$565.5 million. The Department continues to believe that LDRD is a vital asset in the recruitment of a world-class scientific workforce and is critical to the maintenance and development of scientific capabilities that serve DOE's energy and security missions.



FY 2016 REPORT ON LDRD AT THE NATIONAL LABORATORIES

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Secretarial Affirmation

On behalf of the Department of Energy, I am pleased to present the Fiscal Year 2016 Laboratory Directed Research and Development (LDRD) Report to Congress. The Department's national laboratories develop and execute unique scientific and technical capabilities supporting national-level missions that are beyond the scope of academic and industrial institutions. Further, the laboratories develop and sustain scientific and technical capabilities that the Federal Government deems critical. The LDRD Program provides the laboratories with the flexibility to establish and maintain an environment that encourages and supports creativity and innovation, and contributes to their long-term viability. LDRD allows the Department's laboratories to position themselves to advance our national security mission and respond to our Nation's future research needs.

Based on the information and acknowledgments provided to the Department and its contractors by the Federal agencies that are funding LDRD activities in Fiscal Year 2016, I affirm that all LDRD activities derived from funds of other Federal agencies (1) have been conducted in a manner supporting scientific and technical development that benefits the programs of those agencies, and (2) are consistent with the appropriations acts that provided funds to those agencies.



Ernest J. Moniz
Secretary of Energy
December 2016

I. Legislative Language

This report responds to the Conference Report (H. Rept. No. 106-988) accompanying the Fiscal Year (FY) 2001 Energy and Water Development Appropriations Act, which requested the DOE Chief Financial Officer “develop and execute a financial accounting report of LDRD expenditures by laboratory and weapons production plant.” It also responds to the National Defense Authorization Act for FY 1997 (Public Law 104-201), which requires submission each year of “a report on the funds expended during the preceding fiscal year on [LDRD] activities [...] to permit an assessment of the extent to which such activities support the national security mission of the Department of Energy.” Further, this report addresses the request in the Conference Report (H.Rpt. No. 107-258) accompanying the FY 2002 Energy and Water Development Appropriations Act, which requests the Secretary of Energy include in the annual Report to Congress on LDRD expenditures “an affirmation that all LDRD activities derived from funds of other agencies have been conducted in a manner that support science and technology development that benefits the programs of the sponsoring agencies and is consistent with the Appropriations Acts that provided funds to those agencies.”

II. Introduction

The Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq., in Section 31, 42 U.S.C. 2051), directs the Department of Energy (DOE) to ensure the continued conduct of research and development (R&D) and to assist in the acquisition of an ever-expanding body of theoretical and practical knowledge in the fields of energy, its production, uses, handling, and effects. This mission, initially the responsibility of the Atomic Energy Commission (AEC), then that of the Energy Research and Development Administration, and subsequently DOE, has been and continues to be carried out to a significant extent in government-owned facilities.

The AEC recognized that to maintain the laboratories’ intellectual vitality, their ability to respond immediately to developments at the cutting edge of science and technology, and their ability to retain the best scientific, technological, and managerial talent, a certain amount of work must be left to the laboratories’ discretion. Thus, from its inception, the AEC and its successor agencies made allowable certain amounts of research derived from the ideas of the national laboratory researchers themselves.

In 1985, in response to the recommendations of national panels and commissions, the Department established the Exploratory Research and Development Program to formalize the practice of providing its national laboratories with the means to conduct laboratory-initiated R&D.¹ Six years later, DOE renamed the program Laboratory Directed Research and

¹ See, among others, the *Report of the White House Science Council*, Office of Science and Technology Policy, Executive Office of the President, Washington, DC, May 1983; and Guidelines, Energy Research Advisory Board, December 1985.

Development (LDRD) and formally established it at the DOE national laboratories. Today, the LDRD Program at the DOE national laboratories and analogous programs at the Department's nuclear weapons production plants (Plant Directed Research and Development, or PDRD) and Nevada National Security Site (NNSS) (Site Directed Research and Development, or SDRD) are active components of the DOE mission to promote scientific and technical (S&T) innovation that advances the economic, energy, and national security of the United States (U.S.).²

All LDRD activities conducted at the DOE national laboratories are governed by a standard DOE policy (DOE Order 413.2C, *Laboratory Directed Research and Development*), which provides guidance to ensure effective management and oversight of the LDRD Program, while at the same time supporting the laboratories' statutory authority to pursue innovative, self-selected projects in support of the DOE mission. DOE's LDRD policy is consistent with the Department's management practices for all R&D activities in that it includes annual planning and reporting requirements, as well as program and peer reviews to ensure the investments reflect highly innovative and the highest quality research projects. In addition, DOE concurs with each proposed LDRD project before a laboratory commences work to ensure the project complies with Departmental policy. The remainder of this report responds to the LDRD Program financial reporting requirements required by law (see Appendix for the list of statutory and report language requirements) and also provides financial information on PDRD and SDRD programs in Section V of this report for completeness.

² PDRD Programs at DOE's Kansas City, Y-12, Pantex, and Savannah River Plants are consistent with the statutory authorizations found in Section 310 of the FY 2001 Energy and Water Development Appropriations Act (P.L. 106-377) and Section 3156 of the FY 2001 Floyd D. Spence National Defense Authorization Act (P.L. 106-398). The NNSS's SDRD Program is consistent with the statutory authorizations found in Section 310 of the FY 2002 Energy and Water Development Appropriations Act, 2002 (P.L. 107-66).

III. FY 2016 LDRD Financial Reporting

In accordance with Section 309 of Division D of the Energy and Water Development Appropriation Act, 2014, (Public Law 113-76) and DOE Order 413.2 C, the maximum funding level established for LDRD must not exceed six percent of a laboratory’s total operating and capital equipment budgets, including non-DOE funded work, for the year. The total certified cost base shown in the table below represents a laboratory’s total operating and capital equipment budgets, including non-DOE funded work, less exemptions and LDRD. DOE Field Chief Financial Officers certify the accuracy of the cost base.

Table 1. FY 2016 Laboratory Costs and LDRD Costs at DOE Laboratories

<u>Laboratory</u>	<u>DOE-Funded Work (\$M)</u>	<u>Reimbursable Work (RW) (\$M)</u>	<u>Total Lab Certified Cost Base (\$M)</u>	<u>LDRD Costs (\$M)</u>	<u>LDRD Rate (%)</u>	<u>Projects</u>
Ames Lab	51.1	1.1	52.2	1.0	1.92%	9
Argonne National Lab	552.3	119.9	672.2	33.7	5.01%	135
Brookhaven National Lab	438.5	33.0	471.5	11.5	2.44%	48
Fermi National Accelerator Lab	319.8	1.3	321.1	3.3	1.03%	19
Idaho National Lab	778.9	213.3	992.2	17.8	1.79%	71
Los Alamos National Lab	1,761.7	187.1	1,948.8	114.3	5.87%	276
L. Berkeley National Lab	585.1	97.2	682.3	24.6	3.61%	85
L. Livermore National Lab	1,191.6	258.0	1,448.6	85.8	5.92%	182
National Renewable Energy Lab	312.4	37.4	349.8	12.2	3.49%	70
Oak Ridge National Lab	927.7	276.8	1,204.5	44.2	3.67%	184
Pacific Northwest National Lab	576.2	239.3	815.5	39.7	4.87%	218
Princeton Plasma Physics Lab	86.1	2.0	88.1	3.1	3.52%	26
SLAC National Accelerator Lab	212.1	15.9	228.0	7.0	3.07%	34
Sandia National Lab	1,862.6	1,002.2	2,864.8	159.2	5.56%	366
Savannah River National Lab	155.0	27.3	182.3	7.5	4.11%	60
Thomas Jefferson National Accelerator Facility	115.9	6.0	121.9	0.6	0.49%	5
TOTAL LDRD	9,927.0	2,517.8	12,443.8	565.5	4.54%	1,788

LDRD is a cost of doing business that is accumulated through a percentage of the overhead rate charged by a laboratory because LDRD funds cutting edge, creative work that benefits all laboratory programs. Consistent with P.L. 113-235, LDRD is accumulated through a percentage of the total project cost, excluding LDRD and line-item construction, for all work performed by a laboratory. LDRD is an allowable cost in accordance with the terms of the laboratory management and operating contracts and is identified in the laboratories' accounting systems.

The total FY 2016 LDRD program cost at the national laboratories was \$565.5 million, which represents 4.54 percent of total cost base at these laboratories.

Each national laboratory conducted a review of the FY 2016 LDRD projects to determine the relevance of those projects to the missions of the various laboratory customers that provided funds for LDRD. For this review, laboratory customers were considered in three mission categories – defense, non-defense, and homeland security (i.e., Department of Homeland Security (DHS)). The review concluded that FY 2016 LDRD projects were relevant to one, two or all three mission categories. Further, the review indicated that funds contributed by each customer category were invested in LDRD projects relevant to the respective mission areas at a level at least equal to the LDRD funds provided by the customers.

IV. LDRD and the Strategic Partnership Projects (SPP)

SPP creates opportunities to leverage non-DOE Federal and non-Federal resources to accelerate scientific discovery and deploy solutions that benefit both DOE and sponsoring entity missions and goals. SPP plays an important role in the laboratories' efforts to develop, strengthen, and sustain unique S&T capabilities deemed critical by the Government and, in many cases, represents a coordinated set of activities that seek to address large and complex national needs. This leveraging of DOE and SPP activities allows the laboratories to deliver national solutions in a cost-effective manner.

Congress provided language in the Conference Report 107-258 accompanying the Energy and Water Development Appropriations Act, 2002, that requested the Department to notify other Federal agencies that a portion of SPPs will be used to fund LDRD projects. In addition, with the creation of the DHS in the FY 2002 Homeland Security Act, Congress enacted a requirement that LDRD funding provided by DHS must be used to benefit DHS missions. In response to the FY 2002 Conference Report, the Secretary of Energy issued guidance requiring all LDRD laboratories to notify other Federal agencies of LDRD charges before funding work at the laboratories. Specifically, each new and/or revised SPP proposal DOE provides to a Federal agency must indicate the amount of LDRD charges that will be collected on the project. Furthermore, the proposal notifies the sponsor that, by providing funding, the agency is acknowledging that LDRD activities are beneficial to its organization and are consistent with the

appropriation acts that provided funds to the agency. Subsequently, each SPP funding acceptance document also includes the LDRD charge acknowledgement.

In February 2003, the Secretary of Energy and the Secretary of Homeland Security entered into a Memorandum of Agreement to implement key provisions of the Homeland Security Act. In addition, the Deputy Secretary of Energy issued DOE Order 484.1 on *Reimbursable Work for the Department of Homeland Security*. The Order provides information on the process by which the DHS may place orders for reimbursable work activities to be performed at the DOE laboratories. In the Order, there are provisions for notification of LDRD charges in the cost proposal as well as requirements for acknowledgements regarding the benefits of LDRD before final approval.

In December 2003, the DOE Acting Chief Financial Officer provided other Federal agency Chief Financial Officers who are customers and sponsors of work at the Department’s laboratories with applicable guidance and policy documents to explain the Department’s processes. Collectively, the implementation and execution of these policies provide the basis for the Secretary’s affirmation that the LDRD Program is managed in accordance with the Congressional requirements cited above.

V. FY 2016 PDRD and SDRD Programs – Financial Reporting

Plant Directed Research and Development (PDRD) - Fiscal Year Expenditures

Section 308 of Division C of the Omnibus Appropriations Act, 2009 (Public Law 111-8) allowed the Secretary of Energy to authorize an amount not to exceed four percent for PDRD. Table 2 shows FY 2016 PDRD expenditures by site.

Table 2. FY 2016 PDRD Expenditures

<u>Plant</u>	<u>DOE-Funded Work (\$M)</u>	<u>Reimbursable Work (RW) (\$M)</u>	<u>Total Plant Certified Cost Base (\$M)</u>	<u>PDRD Costs (\$M)</u>	<u>PDRD Rate (%)</u>	<u>Projects</u>
Kansas City Plant	533.3	261.9	795.2	23.7	2.98%	169
Pantex Plant	629.1	0.0	629.1	7.8	1.24%	38
Savannah River Plant	193.6	0.0	193.6	3.5	1.80%	15
Y-12 Plant	847.1	0.0	847.1	21.7	2.56%	88
TOTAL PDRD	2,203.1	261.9	2,465.0	56.7	2.30%	310

Site Directed Research and Development (SDRD) - Fiscal Year Expenditures

Section 308 of Division C of the Omnibus Appropriations Act, 2009 (Public Law 111-8) allowed the Secretary of Energy to authorize an amount not to exceed four percent for SDRD. Table 3 shows FY 2016 SDRD Program expenditures.

Table 3. FY 2016 SDRD Expenditures

<u>Site</u>	<u>DOE-Funded Work (\$M)</u>	<u>Reimbursable Work (RW) (\$M)</u>	<u>Total Site Certified Cost Base (\$M)</u>	<u>SDRD Costs (\$M)</u>	<u>SDRD Rate (%)</u>	<u>Projects</u>
Nevada National Security Site	339.2	66.9	406.1	8.9	2.19%	57

VI. Scientific Productivity and Performance

LDRD provides DOE national laboratories the flexibility to support the formulation of their own new theories, hypotheses, and approaches; build new and enhance existing S&T capabilities; and identify and develop technology applications with the potential to advance the DOE mission. Over the years, LDRD projects have realized major science and technology breakthroughs that have been reported widely in the scientific community. The subsequent sections provide examples of key performance results of the LDRD Program for the last several fiscal years.

VII. Workforce Development

The LDRD Program is instrumental in the laboratories' ability to attract promising young scientists and engineers to careers aimed at advancing DOE's mission, thus providing the basis for continually refreshing the laboratory research staff, as well as for the education and training of the next generation of scientists. This includes support for both undergraduate and graduate students working on LDRD projects, technical staff retention resulting from opportunities to retain and hone scientific skills via LDRD, and a range of university collaborations stimulated via LDRD projects. Furthermore, the LDRD Program plays an important role in supporting early-career post-doctoral researchers at the laboratories, as shown in Table 4.

Table 4. Post-Doctoral Researchers Supported by LDRD at the DOE Laboratories in FY 2016

	Total Post-doctoral Count		
	Total # Post-doctoral Researchers at the National Laboratories	Total # of Post-doctoral Researchers Partially or Fully Supported by LDRD Funding ³	% of Post-doctoral Researchers Partially or Fully Supported by LDRD Funding
Total # in FY 2016	3,310	1034	31.2%

VIII. Publications

Publication in the open literature is an important component of any research and development program, especially those that involve the most fundamental scientific studies. Because these reports must first pass through expert reviews by peers in the relevant fields, they are demonstrative of the scientific quality of the knowledge produced through R&D.⁴ The table below provides aggregate numbers of publications for FY 2013-2015 derived from LDRD activities at the DOE laboratories. These statistics demonstrate that LDRD is producing a high volume of outstanding science.

Table 5. Peer-Reviewed Publications, Derived from LDRD Projects

Fiscal Year	Total Publication Count		
	2013	2014	2015
Total # Peer Reviewed Publications	2,109	2,056	2,422

IX. Intellectual Property

As early as 1980, under the Stevenson-Wydler Technology Innovation Act of 1980 (P.L. 96-480) and the Bayh-Dole Act of 1980 (P.L. 96-517), Congress identified technology transfer as a mission of the Federal Government, and expressly authorized DOE to make innovative technologies available to the commercial sector through a variety of mechanisms. Since then, DOE has encouraged its national laboratories to find ways to bring the knowledge, intellectual property, facilities, and capabilities they have developed to the market place in order to meet public and private needs.

³ The number of post-doctoral researchers supported by LDRD in FY 2016 includes postdoctoral researchers at the DOE/NNSA laboratories that spent 10 percent or more of their time at a laboratory working on LDRD during the fiscal year.

⁴ There is no standard value for publications across technical fields (e.g., chemists typically publish numerous short papers, mathematicians publish less frequently but more in-depth, and geologists publish accounts of field work).

LDRD projects are a productive component in advancing the DOE technology transfer mission. One example of LDRD’s productivity is the number of invention disclosures and patents—a useful indicator in measuring technological strength and innovation—that stem from LDRD projects. The table below illustrates the distribution of patents and invention disclosures for FY 2013-2015.

Table 6. Patents Filed/Granted and Invention Disclosures, Derived from LDRD Projects

Fiscal Year	Total Intellectual Property Count		
	2013	2014	2015
Total # Patents	181	160	188
Total # Invention Disclosures	524	376	428

Appendix A. Statutory and Report Language Related to LDRD

Section 3115 of the National Defense Authorization Act, 2016 (Public Law 114-92) FUNDING OF LABORATORY-DIRECTED RESEARCH AND DEVELOPMENT PROGRAMS.

(a) IN GENERAL.—Section 4811(c) of the Atomic Energy Defense Act (50 U.S.C. 2791(c)) is amended—

- (1) by striking “to such laboratories” and inserting “to a national security laboratory”;
- (2) by striking “not to exceed 6 percent” and inserting “of not less than 5 percent and not more than 7 percent”; and
- (3) by striking “by such laboratories” and inserting “by the laboratory”.

(b) BRIEFING REQUIRED.—Not later than February 28, 2016, the Administrator for Nuclear Security shall provide a briefing to the congressional defense committees on—

- (1) all recent or ongoing reviews of the laboratory-directed research and development program, including such reviews initiated by the Secretary of Energy;
- (2) costs and accounting practices associated with laboratory-directed research and development; and
- (3) how laboratory-directed research and development projects support the mission of the National Nuclear Security Administration.

Section 311 of the Consolidated and Further Continuing Appropriations Act for Fiscal Year 2015 (Public Law 113-235)

Of the funds authorized by the Secretary of Energy for laboratory directed research and development, no individual program, project, or activity funded by this or any subsequent Act making appropriations for Energy and Water Development for any fiscal year may be charged more than the statutory maximum authorized for such activities.

Section 309 of Division D of the Energy and Water Development Appropriations Act, 2014 (Public Law 113-76). “Notwithstanding section 307 of Public Law 111-85, of the funds made available by the Department of Energy for activities at Government owned, contractor operated laboratories funded in this or any subsequent Energy and Water Development Appropriations Act for any fiscal year, the Secretary may authorize a specific amount, not to exceed 6 percent of such funds, to be used by such laboratories for laboratory directed research and development.”

Section 307 of the Energy and Water Development Appropriations Act, 2010 (Public Law 111-85). “Of the funds made available by the Department of Energy for activities at Government-owned, contractor-operated laboratories funded in this Act or subsequent Energy and Water Development Appropriations Acts, the Secretary may authorize a specific amount, not to exceed 8 percent of such funds, to be used by such laboratories for laboratory directed research and development: Provided, That the Secretary may also authorize a specific amount

not to exceed 4 percent of such funds, to be used by the plant manager of a covered nuclear weapons production plant or the manager of the Nevada Site Office for plant or site directed research and development.”

Section 308 of Division C of the Omnibus Appropriations Act, 2009 (Public Law 111-8).

LABORATORY DIRECTED RESEARCH AND DEVELOPMENT. Of the funds made available by the Department of Energy for activities at government-owned, contractor-operated laboratories funded in this Act or subsequent Energy and Water Development Appropriations Acts, the Secretary may authorize a specific amount, not to exceed 8 percent of such funds, to be used by such laboratories for laboratory directed research and development: *Provided*, That the Secretary may also authorize a specific amount not to exceed 4 percent of such funds, to be used by the plant manager of a covered nuclear weapons production plant or the manager of the Nevada Site Office for plant or site directed research and development: *Provided further*, That notwithstanding Department of Energy order 413.2A, dated January 8, 2001, beginning in fiscal year 2006 and thereafter, all DOE laboratories may be eligible for laboratory directed research and development funding.

Section 309 of Division C of the Consolidated Appropriations Act, 2008 (Public Law 110-161).

LABORATORY DIRECTED RESEARCH AND DEVELOPMENT. Of the funds made available by the Department of Energy for activities at government-owned, contractor-operated laboratories funded in this Act or subsequent Energy and Water Development Appropriations Acts, the Secretary may authorize a specific amount, not to exceed 8 percent of such funds, to be used by such laboratories for laboratory-directed research and development: *Provided*, That the Secretary may also authorize a specific amount not to exceed 4 percent of such funds, to be used by the plant manager of a covered nuclear weapons production plant or the manager of the Nevada Site Office for plant or site-directed research and development: *Provided further*, That notwithstanding Department of Energy order 413.2A, dated January 8, 2001, beginning in fiscal year 2006 and thereafter, all DOE laboratories may be eligible for laboratory directed research and development funding.

109th Congress - House of Representatives Energy & Water Appropriations Conference Report 109-275 (2006).

“The conferees are concerned with the level of overhead charges applied to programs funded in this bill and urge the Department to continue to work to minimize the overhead burden on all program activities. In order to ensure an equitable allocation of overhead costs the Secretary should apply overhead charges to LDRD activities consistent with cost accounting practices applied to program activities that are direct funded. The conference agreement increases the allowable percentage for LDRD, PDRD and SDRD activities to allow this accounting change without harming the underlying discretionary research activities. The change in accounting practices should be implemented with no net reduction in LDRD levels below 6 percent of the funds provided by the Department of Energy to such labs for national security activities and 2 percent for PDRD and SDRD activities at the appropriate plants and sites. Within 90 days after the date of enactment of this Act, the Secretary of Energy shall

submit a report to the Committees on Appropriations detailing how the accounting change will be implemented without impacting the basic research and the change shall be implemented within 180 days of enactment.”

Section 311 of the Energy and Water Development Appropriations Act, 2006 (Public Law 109-103). “Of the funds made available by the Department of Energy for activities at government-owned, contractor-operator operated laboratories funded in this Act or subsequent Energy and Water Development Appropriations Acts, the Secretary may authorize a specific amount, not to exceed 8 percent of such funds, to be used by such laboratories for laboratory-directed research and development: *Provided*, That the Secretary may also authorize a specific amount not to exceed 3 percent of such funds, to be used by the plant manager of a covered nuclear weapons production plant or the manager of the Nevada Site Office for plant or site-directed research and development: *Provided further*, That notwithstanding Department of Energy order 413.2A, dated January 8, 2001, beginning in fiscal year 2006 and thereafter, all DOE laboratories may be eligible for laboratory directed research and development funding.”

108th Congress - House of Representatives Energy & Water Appropriations Report 108-212 (2004). “The Committee recognizes the value of conducting discretionary research at DOE’s national laboratories. Such research provides valuable benefits to the Department and to other Federal agencies, and is crucial to attracting and retaining scientific talent at the laboratories. However, the Committee continues to have concerns about the financial execution of this program. One concern centers on the manner in which DOE levies the LDRD “tax” on all DOE and Work for Other programs, and then accumulates the funds into an overhead pool. This Committee typically deals with defense and non-defense allocations within the Energy and Water Development bill, and the line between those two allocations is not easily crossed. Under LDRD, however, the laboratory directors are able to pool defense and non-defense appropriations at will. The only obvious solution to this concern is to require DOE to establish and track separate LDRD accounts for defense and non-defense funding sources, and the Committee is not yet ready to direct that change. The other principal concern deals with the application of LDRD to work being performed for other agencies (Work for others). The conference report accompanying the Energy and Water Development Appropriations Act, 2002 (P.L. 107–66) directed the Secretary to “include in the annual report to Congress on LDRD activities an affirmation that all LDRD activities derived from funds of other agencies have been conducted in a manner that support science and technology development that benefits the programs of the sponsoring agencies and is consistent with the Appropriations Acts that provided funds to those agencies.” The Department has implemented this guidance by including the following language into its standard project proposal and funding acceptance documents that it requires the funding WFO agencies to sign: “The Department of Energy believes that LDRD efforts provide opportunities in research that are instrumental in maintaining cutting edge science capabilities that benefit all of the customers at the laboratory. The Department will conclude that by providing funds to DOE to perform work, you acknowledge that such activities are beneficial to your organization and consistent with appropriations acts that provide funds to you.” This is too facile a solution for the Department. According to a review conducted by this Committee’s investigative staff, only a little more than

half of the WFO customers indicated they could reliably certify that DOE's LDRD activities are consistent with the funding agencies' appropriations acts. Nevertheless, most agencies sign the required certification letter to DOE because they see no real alternative. The Committee fully expects that there are terms and conditions attached to the appropriations acts for these other agencies that are being ignored through this so-called "certification" process for LDRD work."

The Committee is considering changing the arrangement by which LDRD activities are funded to eliminate these concerns. The results of an ongoing General Accounting Office review will help to inform the Committee's choice. The Committee is receptive to streamlining the annual LDRD report to Congress, which is undoubtedly a significant burden for the Department to prepare and is of little value to this Committee in resolving the concerns identified above. The Department should work with Committee staff to develop a simpler and more useful LDRD report."

107th Congress - House of Representatives Energy & Water Appropriations Conference Report 107-258 (2002). "The conference agreement does not include bill language proposed by either the House or the Senate regarding the Laboratory Directed Research and Development (LDRD) program. The conferees recognize the benefits of LDRD and expect LDRD activities to continue at previously authorized levels. However, when accepting funds from another Federal agency that will be used for LDRD activities, the Department of Energy shall notify that agency in writing how much will be used for LDRD activities. In addition, the conferees direct the Secretary of Energy to include in the annual report to Congress on all LDRD activities an affirmation that all LDRD activities derived from funds of other agencies have been conducted in a manner that supports science and technology development that benefits the programs of the sponsoring agencies and is consistent with the Appropriations Acts that provided funds to those agencies."

Utilization of Department of Energy National Laboratories and Sites in Support of Homeland Security Activities - FY 2002 Department of Homeland Security Act (Public Law. 107-296, Section 309, 6 USC 189(6) f) Laboratory Directed Research and Development by the Department of Energy.--No funds authorized to be appropriated or otherwise made available to the Department in any fiscal year may be obligated or expended for laboratory directed research and development activities carried out by the Department of Energy unless such activities support the missions of the Department of Homeland Security.

106th Congress - House of Representatives Energy & Water Appropriations Conference Report 106-988 (2001). "The conference agreement includes an allowance of six percent for the laboratory directed research and development (LDRD) program and two percent for nuclear weapons production plants. Travel costs for LDRD are exempt from the contractor travel ceiling. The conferees direct the Department's Chief Financial Officer to develop and execute a financial accounting report of LDRD expenditures by laboratory and weapons production plant. This report due to the House and Senate Committees on Appropriations by December 31, 2000,

and each year thereafter, should provide costs by personnel salaries, equipment, and travel.⁵ The Department should work with the Committees on the specific information to be included in the report.”

Section 3136 of the National Defense Authorization Act for Fiscal Year 1997

(Public Law 104-201).

(a) Limitation.--No funds authorized to be appropriated or otherwise made available to the Department of Energy for fiscal year 1997 under section 3101 may be obligated or expended for activities under the Department of Energy Laboratory Directed Research and Development Program, or under any Department of Energy technology transfer program or cooperative research and development agreement, unless such activities support the national security mission of the Department of Energy.

(b) Annual Report.--(1) The Secretary of Energy shall annually submit to the congressional defense committees a report on the funds expended during the preceding fiscal year on activities under the Department of Energy Laboratory Directed Research and Development Program. The purpose of the report is to permit an assessment of the extent to which such activities support the national security mission of the Department of Energy. (2) Each report shall be prepared by the officials responsible for Federal oversight of the funds expended on activities under the program. (3) Each report shall set forth the criteria utilized by the officials preparing the report in determining whether or not the activities reviewed by such officials support the national security mission of the Department.

⁵The offer to streamline the LDRD report resulted in the Department and Hill contacts agreeing not to require costs be provided by personnel salaries, equipment, and travel.