

Doing Business with the National Labs

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Laboratory Coordinating Council
<http://www.oit.doe.gov/lcc>

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**Industrial Technologies Program
Office of Energy Efficiency and Renewable Energy
United States Department of Energy**

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Executive Summary

The expertise and equipment resources of the U.S. Department of Energy (DOE) laboratories and facilities are available to help industry transform manufacturing processes, improve energy efficiency and reduce waste through new technologies and DOE's Industries of the Future (IOF) program. Established in 1995, the Laboratory Coordinating Council networks these capabilities to help create highly effective partnerships with the Industries of the Future to (1) stimulate and foster collaborations, (2) simplify access to laboratories and facilities, and (3) help industries meet goals of reducing energy use and waste.

The purpose of this document is to guide those interested in taking advantage of the laboratory resources and to answer questions about how the laboratories and DOE do business.

Three formal ways for the laboratories to collaborate with the private sector are shown in the table below. DOE adopted the modular Cooperative Research and Development Agreement (CRADA) to provide a consistent legal framework for all laboratories to offer their industrial partners. The modular CRADA represents DOE's full range of pre-approved terms and conditions. Because each government-owned and contractor-operated facility has its own prime contract with DOE and may be not-for-profit, nonprofit, or for-profit, there are minor differences in terms and conditions. Special provisions provide for intellectual property rights and patent waivers. Through another mechanism, directly sponsored laboratory work relating to DOE missions is performed through Work for Others agreements (WFO). Laboratories also offer user facilities that companies can use on a proprietary basis, for a fee, or a non-proprietary basis to access significant capabilities developed in the performance of DOE mission work in energy resources, national security, science, and environmental quality.

The Field Work Proposal (FWP) is a mechanism by which DOE authorizes funding to DOE laboratories and facilities. With DOE approval, laboratories can use funds provided by an FWP to participate in a CRADA with industry.

| Agreement | Description | Information Protection | Intellectual Property |
|---|---|--|--|
| CRADA—Cooperative Research and Development Agreement | Establishes a partnership with industry for collaborative R&D activities. Either industry or a government agency may fund the laboratory efforts. | The parties may protect their CRADA data for up to 5 years. Typically, publishing party provides 30 days for review prior to intended publication. Other conditions may apply. | Each party retains title to its own inventions. An option for a royalty-bearing exclusive license is granted to the industry partner in a field of use for DOE laboratory inventions with reasonable compensation. Other conditions may apply. |
| Non-Federal WFO—Work for Others | Industry and non-profit institutions provide funding to a laboratory in order to access their unique facilities, equipment, and personnel. | Data rights negotiable, ranging from fully proprietary to all parties can use all data produced without restriction. Other conditions may apply. | Title to DOE laboratory inventions may go to the sponsor under a DOE class waiver, depending on work funded and type of funds. |
| User Agreement | Provides access to certain unique DOE laboratory experimental facilities for research, testing, and developing prototypes. | Negotiable. There are both proprietary and nonproprietary agreements. | A DOE class waiver provides that user inventions go to the user. |

There are also many informal ways for industry to work with DOE national laboratories and facilities, such as through staff exchanges. Through its extensive network of technical expertise and industry interaction, the Laboratory Coordinating Council can play a facilitating role for creating new collaborations.

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Introduction

In 1995, a unique combination of national, federal, and special purpose laboratories and facilities entered into a Memorandum of Cooperation to form the Laboratory Coordinating Council (LCC)—see inside front page for points-of-contact. The LCC set a goal of facilitating industry access to the combined capabilities of the laboratories in support of the Industries of the Future (IOF) program. The LCC aimed to respond to the research needs of the major process industries, working closely with industry to create a more competitive, energy-efficient future.

Opportunities abound for businesses to use and benefit from the outstanding scientific and technical resources of U.S. Department of Energy (DOE) laboratories and facilities. The LCC gives industry access to a “virtual” laboratory that can be tailored to meet the specific requirements of almost any research need. Industry researchers no longer need to approach each laboratory separately to explore their unique capabilities. With their technical expertise, LCC teams constitute a valuable resource for industry to develop technology roadmaps and collaborative partnerships that will help them achieve their vision. The purpose of this document is to guide those interested in taking advantage of these laboratory resources and to answer questions about how the laboratories and DOE do business.

Businesses that have worked with DOE and the laboratories during the past two decades have identified barriers to streamlined collaboration, such as:

- Patent ownership did not always flow to the business partner
- Intellectual property ownership was sometimes unclear or not uniformly assigned
- Contract terms and conditions of Cooperative Research and Development Agreements (CRADAs) varied from time to time and from laboratory to laboratory
- Reaching a formal agreement was often time consuming
- The process was inconsistent among the laboratories.

The LCC offers a renewed determination that the laboratories shall strive to be productive contributors to the growth and success of American industry by developing and applying science and technology solutions to challenging problems. Building upon successful collaborations, the LCC set out to overcome past perceptions by establishing a better and easier way for companies in the IOF program to work with DOE laboratories. Steps include:

- Educate industries about the unique resources that are available
- Stimulate and foster collaborations
- Enhance understanding of mechanisms for partnering within the framework of accepted DOE practices.

These steps, consistent with the mission of DOE’s Industrial Technologies Program, help industries meet goals of reducing energy use and waste.

There are several ways of working formally with the laboratories. Two major ones are the modular Cooperative Research and Development Agreement (CRADA) and the common Work for Others (WFO) agreement. In addition, the laboratories have many unique user facilities and specialized capabilities available to industry. Personnel exchanges are another avenue available for collaboration. It is also possible for a laboratory to work formally or informally directly with industry using funds they receive through a Field Work Proposal (FWP), a mechanism by which DOE authorizes funding for laboratory programs. For example, the work scope and funding can be included in a CRADA between the parties.

Instead of using agreements created for each program, as was done in the past, DOE has established the modular CRADA as the preferred way of doing business. At the same time, the laboratories are making progress toward a uniform interpretation and application of terms and conditions.

The following sections of this document provide detailed information on doing business with the laboratories. Various mechanisms used by the private sector are described with links to other reference sources. Answers to frequently asked questions are provided. Detailed information on patent rights and intellectual property is included in Appendix 1.

Although technology licensing is not specifically discussed in this report, all of the national laboratories use licensing to transfer more mature technologies to the private sector. License rights range from exclusive, to field-of-use, to non-exclusive. The execution of a license is sometimes coupled with a CRADA or WFO to enable the laboratory and the private partner to collaborate on further development of the licensed technology.

Working with the Laboratories

Companies typically use three mechanisms for collaborating with the government-owned, contractor-operated (GOCO) laboratories.

- CRADA—The private sector partner and the laboratory or laboratories work together, frequently with funds supplied equally by the partners.
- WFO—The private sector partner pays a laboratory to do a specified piece of work.
- User Facilities—The private-sector partner pays for the use of laboratory facilities, usually with the participation of skilled laboratory personnel.

The GOGO (government-owned, government-operated) laboratories operate with very similar CRADA and WFO mechanisms. GOCO laboratories are authorized to subcontract with industry and academia for work that complements the DOE mission.

CRADAs have been used for many years to formalize business–laboratory collaborations. The essence of a CRADA is that each collaborator contributes about equally to the research, development, or demonstration project. A partner’s contribution might be labor, facilities, funds, or some combination of these. Many CRADAs were successfully completed, but in the early years there was criticism that CRADA terms and conditions varied significantly among the national laboratories. In 1995, such criticism led DOE to draft a modular CRADA that established uniform conditions for doing business with its GOCO laboratories. A modular CRADA can involve one or more laboratories and business partners. The language of the modular CRADA includes all the provisions from which industry may select.

A manual (rev June 12, 2001) is provided with detailed requirements for the performance of technology transfer through the use of CRADAs. The modular CRADA agreement is contained in two electronic formats of the manual:

- <http://www.directives.doe.gov/pdfs/doe/doetext/neword/483/m4831-1.html>
- <http://www.directives.doe.gov/pdfs/doe/doetext/neword/483/m4831-1.pdf>

Questions concerning this manual should be addressed to the DOE Assistant General Counsel for Technology Transfer and Intellectual Property, who can be reached at (202) 586-2802, or <http://www.gc.doe.gov/gcmain.html>.

WFOs enable businesses to employ the unique capabilities of a DOE laboratory. In this case, funds will usually flow from the business to the laboratory as compensation for unique services provided. Special provisions provide for intellectual property rights and patent waivers.

A manual (revised October 3, 2001) establishes requirements and provides typical language for the performance of work for non-DOE entities by DOE contractor personnel and/or the use of DOE facilities that is not directly funded by DOE appropriations. The manual is available in two electronic formats:

- <http://www.directives.doe.gov/pdfs/doe/doetext/neword/481/m4811-1ac1.html>
- <http://www.directives.doe.gov/pdfs/doe/doetext/neword/481/m4811-1ac1.pdf>

The action steps and keys to successful implementation for teams to develop CRADA and WFO agreements are illustrated in Tables 1 and 2, respectively.

The GOCO laboratories have user facilities that are available to industry for a fee. In such cases, business employees will work with laboratory staff to apply that laboratory's specialized equipment to specific needs. The LCC website, <http://www.oit.doe.gov/lcc>, also provides access to user facilities at each organization.

DOE established the Technology Transfer Working Group (TTWG) as a standing working group reporting to the DOE R&D Council to review, develop, and integrate DOE technology transfer policies. Included in the group's charter are matters relating to intellectual property and CRADAs, coordinating implementation of recommendations, and ensuring the harmonization of CRADA and WFO policies, but not the day-to-day operational aspects of either mechanism. The TTWG optimized the modular CRADA process. The modular CRADA, with its menu of options for industry, is the mechanism of choice for working with the DOE laboratories.

Table 1: Action Steps for a Cooperative Research and Development Agreement (CRADA)

| | National Laboratory | Both | Industry Partner |
|---|---|--|----------------------------|
| 1 | | Researchers discuss ideas, identify mutual interest, draft scope of work | |
| 2 | Determine contract considerations | | Identify corporate support |
| 3 | Develop Joint Work Statement (JWS) Send draft CRADA to Industry Partner | Draft Statement of Work w/ milestones, etc. | |
| 4 | Submit JWS to DOE Operations Office | | Review draft CRADA |
| 5 | DOE Operations Office approval of JWS | Review of CRADA documents and complete negotiations | |
| 6 | Develop and distribute final CRADA | Review final CRADA | |
| 7 | Obtain Laboratory, DOE Operations, and DOE HQ approval (if needed) of CRADA | | Approve final CRADA |
| 8 | | Execute CRADA | |

Keys to Successful Implementation

- Laboratory and industry principal investigators responsible for the technical effort communicate early.
- Laboratory and industry technology transfer staff responsible for coordinating overall activity communicate early.
- All parties agree on funding levels and sources before starting the CRADA process.
- Negotiations deal with several important factors, including: (1) ownership and intellectual property; (2) product liability and indemnification and hold-harmless clauses; (3) U.S. manufacture and competitiveness.

Source: Adapted from material prepared by Oak Ridge National Laboratory, 4/2/02.

Table 2: Action Steps for Work for Others (WFO) Agreements

| | National Laboratory | Both | Industry Sponsor |
|---|--|--|----------------------------|
| 1 | | Researchers discuss ideas, identify mutual interest, draft scope of work | |
| 2 | Determine contract considerations | | Identify corporate support |
| 3 | Complete appropriate project information forms (PIFs) for DOE review/approval; draft WFO agreement | Draft Statement of Work w/ milestones, etc. | |
| 4 | Submit PIFs to DOE Operations Office; send draft WFO agreement to sponsor | | Review WFO Agreement |
| 5 | DOE Operations Office approval of PIF | Review of WFO terms and conditions and complete negotiations | |
| 6 | Develop and distribute final WFO agreement | Review final WFO agreement | |
| 7 | Obtain Laboratory, DOE Operations Office, and sponsor approval as required | | |
| 8 | | Execute WFO agreement | |

Keys to Successful Implementation

- Laboratory and industry principal investigators responsible for the technical effort communicate early.
- Laboratory and industry technology transfer staff responsible for coordinating overall activity communicate early.
- All parties agree on funding levels and sources before starting the WFO process.
- The “time of negotiations” depends on several important factors: (1) normally, no U.S. competitiveness clause; (2) normally, intellectual property rights go to the sponsor; otherwise, national laboratory retains intellectual property rights; (3) If sponsor is subcontracting federal funds to the national laboratory, then normally industry does not obtain intellectual property rights.
- Other considerations: (1) product, general, and intellectual property indemnification; (2) advance payment (only waived for states with constitutional prohibition); (3) national laboratory cannot accept another federal or state agency’s “flow-down” terms when industry sponsor is using public funds; (4) national laboratory cannot compete with private sector (sponsor attests); (5) FAR does not apply since the national laboratory is doing a third-party agreement.

Source: Adapted from material prepared by Oak Ridge National Laboratory, 4/10/02.

Frequently Asked Questions about Working with the Laboratories

Question #1: What is different about working with the DOE laboratories?

Answer #1: The DOE laboratories have diverse backgrounds. They were created to support the various missions of the Department, including energy, national security, science, and related environmental activities. Each government-owned, contractor-operated (GOCO) laboratory is managed through an independent contract between the lead DOE Headquarters organization, its implementing local DOE Field or Operations Office, and the respective laboratory's managing organization. DOE organizations include Energy Efficiency and Renewable Energy, Science, Defense Programs, and Environmental Management. Laboratory managing organizations can be one or more companies, universities, non-profit institutions, or a consortium. For example, Lockheed Martin manages and operates Sandia National Laboratories. The management contracts are subject to periodic review and evaluation, and re-competition. The combination of these elements can make it challenging to work with a DOE Laboratory. DOE also owns and operates laboratories (GOGOs) and other facilities that support specific DOE missions.

Several helpful activities have been undertaken to facilitate partnering with DOE:

1. A communications hub for accessing technology developed by DOE's network of research and development facilities—http://www.energy.gov/business/sub/technology_partnerships.html
2. The creation of the Technology Partnerships Working Group (TPWG), consisting of technology transfer professionals from across the DOE complex to facilitate communications, share lessons learned, and streamline activities—<http://www.lanl.gov/partnerships/tpwg/tpwg.html>

Question #2: Are any steps being taken to streamline the various processes by which the private sector can work with the DOE Laboratories?

Answer #2: Yes! Specific examples of improvements include:

1. Many laboratories have established benchmarks and reengineered their practices. Today simple agreements for user facilities can be done within a week if all the terms of the pre-approved agreement are acceptable to industry.
2. DOE streamlined agreements and has issued DOE Manual 483.1-1, which includes guidance for the negotiation and approval by DOE of all CRADAs (referenced on page 5). It includes a number of pre-approved clauses from which laboratories and companies/industry sectors can tailor an agreement.
3. Time to reach a CRADA agreement has been reduced. The process is outlined in Table 1. All of these activities have their own timetables. Essentially, a more complex agreement can extend the preparation time. When the partners are in agreement, the preparation time can be reduced. Some CRADAs can be executed in less than one month. See <http://www.lanl.gov/partnerships/tpwg/success.htm> for one example of a satisfied business customer after the CRADA process.

DOE is institutionalizing performance-based management through the activities of the DOE National Laboratories Improvement Council (<http://labs.ucop.edu/internet/nlic/>), which is committed to a process of continuous improvement in program performance, environment, safety, health, and best business practices.

Question #3: Why does DOE retain government license and march-in rights?

Answer #3: Retention of these rights in CRADAs is required by law. The Government license is viewed as recognition of the Government investment that created the facility and the background technology from which a CRADA arises. March-in rights are retained by the Government to assure that technology arising from laboratories is commercialized. Should a laboratory licensee or CRADA partner abandon commercialization, the government has the right to require the partner to license a third party, who is interested in commercializing the technology, at a reasonable royalty. These rights have never been exercised.

Question #4: How can companies protect their confidential and proprietary information while working with the DOE national laboratories?

Answer #4: CRADAs normally contain provisions addressing protection of a partner's proprietary data. Non-disclosure agreements can easily be put in place for initiating discussions related to creating a potential collaboration. Agreements to protect a partner's proprietary information can be executed prior to the initiation of any work. A company's proprietary information agreement template can be used, but use of the standard agreement offered by the national laboratory of interest often expedites the signature of these agreements. Data first produced in the performance of a CRADA can be protected from public release by the laboratory or the Government for five years. It is important that companies mark all the information that they provide to the laboratories' staff in accordance with the agreements between the parties for protection of data.

Question #5: How can the intellectual property interests of multiple collaborators be accommodated?

Answer #5: There are examples of successful multi-party collaborations that accommodated the interests of various organizations, including multiple DOE laboratories. Clear communications and up-front negotiations of intellectual property rights can help save time. For example, in the alternative feedstocks for chemicals program, five laboratories set up sharing agreements of intellectual property among themselves and with a company. The intellectual property developed by one laboratory was used by other laboratories, and the company benefited from inventions at several laboratories.

Question #6: Why are liability provisions in user agreements of Management and Operating (M&O) contractors so complex and frequently different from conventional commercial provisions?

Answer #6: Government laboratories are taxpayer-funded and self-insured, therefore, they must be limited in their ability to indemnify third parties.

Question #7: How can I contact the LCC or a specific national laboratory? Where can I find out about the capabilities and facilities of LCC members?

Answer #7: Look on the inside front cover of this document or look us up on the Internet at <http://www.oit.doe.gov/lcc/> to find appropriate points-of-contact. Capabilities and facilities information of member organizations are also available on the LCC website.

Question #8: Where can I find more information?

Answer #8: The websites referenced above are good resources. For example, Lawrence Berkeley National Laboratory has also assembled frequently asked questions related to their technology transfer activities: <http://www.lbl.gov/Tech-Transfer/licensing/FAQ.html>

Appendix 1. Information about Intellectual Property and Waivers

Statutes That Govern DOE's Intellectual Property Policies

Section 152 of the Atomic Energy Act of 1954, as Amended

DOE, like its predecessors the AEC and the Energy Research and Development Administration (ERDA), is a “title” agency with respect to inventions made while performing its R&D activities. This means that DOE is required to take title in each invention made while performing its R&D activities—unless it waives the government’s title rights, or the funding agreement is with a small business (500 or fewer employees) or non-profit organization.

The first DOE patent statute is Section 152 of the Atomic Energy Act of 1954, as amended (PL 83-703). Under this statute, title to any invention useful in producing or using special nuclear material or atomic energy made or conceived during the course of or under a contract vests in DOE, unless DOE waives these rights.

Section 9 of the Federal Non-Nuclear Energy Research and Development Act of 1974 (PL 93-577)

The second DOE patent statute is found in Section 9 of the Federal Non-Nuclear Energy Research and Development Act of 1974 (PL 93-577). Title to any invention made during the course of or under any contract with ERDA (now DOE) vests in the government, unless waived by DOE.

These statutes provide the Secretary of Energy with broad latitude and discretion to mold the intellectual property rights disposition to a contract situation by exercising the waiver authority. For DOE to waive the government’s rights to inventions made with taxpayer funds, the Secretary must determine that a waiver is in the best interest of the United States and the general public.

Four broad objectives guide the Secretary in making a waiver determination:

- Make the benefits of DOE’s energy RD&D widely available to the public in the shortest practicable time
- Promote the commercial use of such inventions
- Encourage participation by private persons in DOE’s energy RD&D programs
- Foster competition and prevent undue market concentration or the creation or maintenance of other situations inconsistent with the antitrust laws.

DOE was given broad discretion in waiving the government’s rights in inventions. However, Congress attached certain “strings” to every invention waived by DOE. These include:

- A worldwide, nonexclusive, irrevocable, paid-up license to use the waived invention on behalf of the government
- Certain march-in rights.

Industry seldom understands that these two reservations may apply.

Bayh-Dole Act (PL 96-517)

The third DOE patent statute requires all federal agencies to grant to small businesses and nonprofit organizations the first right to elect title to inventions arising under their funding agreements. Unlike the first two statutes, this right begins at the time of contracting. There is no requirement for a “best interest” determination. The right of a small business or non-profit organization to elect to retain title to any invention is automatically available when it executes the contract. DOE or its M&O contractors must give small business or non-profit organizations the right to elect title to inventions arising under any funding agreement such as a subcontract. The Bayh-Dole law is also important for any non-profit or not-for-profit organization that manages and operates one of DOE’s national laboratories. In such cases, inventions arising from the performance of the M&O contract are subject to Bayh-Dole, giving the non-profit organization the first option to elect title to such inventions.

What Governs the Department of Energy's Patent Waivers?

General Criteria

DOE set forth the statutory criteria for determining that a waiver of the government's right to inventions will best serve the interests of the United States and the general public. The extent to which the non-federal party is willing to substantially cost share (at least 20%) in the research effort has been the predominant justification for waiver grants.

DOE has extensively used its broad waiver authority in contracting for R&D work, mostly in individual cooperative agreements and contracts where the non-federal party agreed to cost-share in the research, and in cost-shared subcontracts of its M&O contractors.

Beginning in the early 1980s, DOE granted a series of class waivers designed to make the unique technical resources and facilities in its national laboratories more user-friendly to industry and academia, and to encourage wider use of national resources and facilities. DOE directed the class waivers to a group of contract situations or a group of facilities having a common characteristic. This enabled DOE to greatly expedite the time for processing waiver petitions when a group of contracts or facilities could be identified as a candidate for a class waiver determination.

Work for Others

The first WFO agreement was a class patent waiver of inventions made by sponsors and M&O contractors arising from any WFO agreement entered into by the M&O contractor. The sponsor could automatically elect title to any invention made by the M&O contractor in performing the agreement; the waiver also covered any invention of the sponsor for which the sponsor was performing research under the agreement.

DOE issued a guidance document (DOE G 481.1) to improve the processing time for WFO agreements and provide more flexibility in disposing rights to inventions. The policy set forth in the guidance document allowed the DOE field offices, for the first time, to delegate (upon approval of a laboratory management plan) to the M&O contractor the authority to make the determinations and execute the WFO agreement.

The policy also granted greater flexibility in the disposition of rights to inventions by identifying three situations that permitted the M&O contractor to elect to retain title to any invention made, instead of the sponsor having the election to retain title:

- Where work might result in an invention that is a research tool
- Where the sponsor is owned or controlled by a foreign organization
- Where the sponsor's field of use is limited.

User Agreements

The second waiver was for inventions made while performing research in certain designated user facilities. It granted to the user the right to retain title to any inventions made while performing the Use of Facilities Agreement (UFA) because the user was entering the designated user facility to conduct research. This was in contrast with the class patent waiver for WFO agreements, in which inventions of either the sponsor or the M&O contractor made during the performance of the agreement were included in the scope of the class patent waiver.

Most of the national laboratories have established standard user agreements (nonproprietary or proprietary) that implement the DOE class patent waiver and grant the user the right to retain title to any invention made by the user while performing the agreement. The standard user agreement also contains technical data provisions that permit the user to mark and remove technical data that qualify as proprietary data of the user. It also contains other terms and conditions, including a liability provision, for conducting the research.

Cooperative Research and Development Agreements

Another class patent waiver granted by DOE covered inventions made by employees of a participant and the M&O contractor arising out of a CRADA. DOE implemented PL 101-189 to permit the M&O contractors to enter into CRADAs.

DOE granted a class waiver covering inventions made under CRADAs with its M&O contractors to facilitate the placement of CRADAs by its M&O contractors under this new authority. This would also take advantage of the technology transfer capability of the M&O. The M&O contractor (non-profit or for-profit) had the right to elect title to inventions of its employees, and the participant had the right to elect title to inventions made by its employees.

The class patent waiver encouraged wider participation by the private sector in CRADAs, but the parties encountered delays caused by lengthy negotiations about the terms and conditions. As part of its commitment to Congress to streamline the CRADA process, DOE issued a “modular CRADA,” along with criteria, to be used by its M&O contractors in CRADA negotiations. The modular CRADA published for the first time DOE’s full range of pre-approved terms and conditions, including a title to inventions article, available for use with industry and academia. This is the preferred mode of operation today.

Steel Initiative

PL 99-199 authorized the Steel Initiative Program. A large part of the R&D was expected to be conducted at DOE’s national laboratories, many of which were run by non-profit organizations. These organizations would ordinarily be entitled to elect to retain title to inventions made under their research work. Additionally, DOE expected to award contracts and subcontracts to domestic companies, which could be small businesses or non-profit organizations that would ordinarily be entitled to retain title to their inventions.

In order to avoid a fractured ownership of technologies under the Steel Initiative Program, DOE issued an Exceptional Circumstances Determination directed to its funding agreements awarded in that program. The Exceptional Circumstances Determination provided that small businesses and non-profit organizations performing work in the Steel Initiative Program would not automatically obtain title to their inventions. Rather, DOE would permit, through an advance patent waiver, title to these inventions to flow to a private concern or concerns, which would hold title for the beneficial interests of the participants in projects under the Steel Initiative Program.

Congress (PL 100-680) expanded the original Steel Initiative Program to cover R&D in steel, aluminum, and copper process technologies and was known as DOE’s Metal Initiative. The advance patent waiver granted for the Steel Initiative was subsequently expanded to cover the Metal Initiative.

Cost-Shared Subcontracts

DOE has indicated in its published waiver regulations that substantial cost sharing by the contractor (or subcontractors) is a justification for granting of an advance patent waiver. DOE has not, however, used its broad waiver authority to grant a class patent waiver for cost-shared contracts, except in the High Temperature Superconductivity Pilot Program. In the absence of such a class patent waiver, cost-shared subcontracts are handled case-by-case. This requires a waiver petition to be submitted by the subcontractor to the M&O contractor, the local patent counsel preparing a Statement of Considerations, and DOE Headquarters granting the waiver. This is time consuming and inefficient. It can also delay execution of the subcontract and start of the research work.

Management and Operating Contracts

DOE granted a class patent waiver for inventions made by employees of its for-profit M&O contractors. Because more than 90% of the inventions made under DOE’s R&D contracts arise in the performance of M&O contracts, the class patent waiver greatly simplified the process by which inventions were made available for

commercialization. The waiver enabled the M&O contractors to promote the early commercialization of inventions through a licensing program. By granting title to each elected invention, the M&O contractor could, in turn, offer third parties non-exclusive or exclusive licenses on a royalty-bearing basis. The government license and government march-in rights were retained in each waived invention. Also, commitments to meet the U.S. competitiveness provision of the technology transfer contract amendment were secured in each license agreement.

Other Laws That Govern DOE's Technology Transfer Policies

Stevenson-Wydler Act and Amendments

In addition to these statutes governing DOE's patent policy, Congress in the 1980s enacted several laws that required federal agencies to actively pursue the transfer of technology from their national laboratories and facilities. This was in response to U.S. industry losing its competitive edge in domestic and global markets in specific areas. Therefore, to reverse the downward spiral engulfing U.S. industry, Congress placed great emphasis on agencies and their national laboratories and facilities to transfer taxpayer-financed technology to the private sector. This would enhance the ability of U.S. industry to compete with foreign firms in U.S. and foreign markets.

The first enactment was the Stevenson-Wydler Technology Innovation Act of 1980 (PL 96-480). The Act stated that the policy of the federal government was to strive to transfer federally owned or originated technology to the private sector. It also emphasized that the results obtained from the government's investment in R&D should be used for the public good.

The 1980 Act was amended in several important aspects with the passage of the Federal Technology Act of 1986 (PL 99-502). It created an entirely new contracting vehicle, the CRADA, for use by federal agencies in carrying out cooperative research. The CRADA was for use in GOCO facilities, for example, DOE's Federal Energy Technology Center, now the National Energy Technology Laboratory (NETL).

Also, the 1980 Act was amended by PL 98-620, which extended the provisions of Bayh-Dole to big businesses, particularly with reference to the government-retained license, government march-in rights, and preference for U.S. industry.

In 1989, the National Competitiveness Technology Transfer Act (PL 101-189) extended the authority to enter into CRADAs to GOCO facilities, for example, DOE's national laboratories. A second amendment created a statutorily exempt category of information created under the CRADA; for example, agencies were permitted to withhold CRADA-developed information from public dissemination for as long as five years, including Freedom of Information Act requests. Equally important, another amendment mandated that technology transfer was a mission of each national laboratory contract.

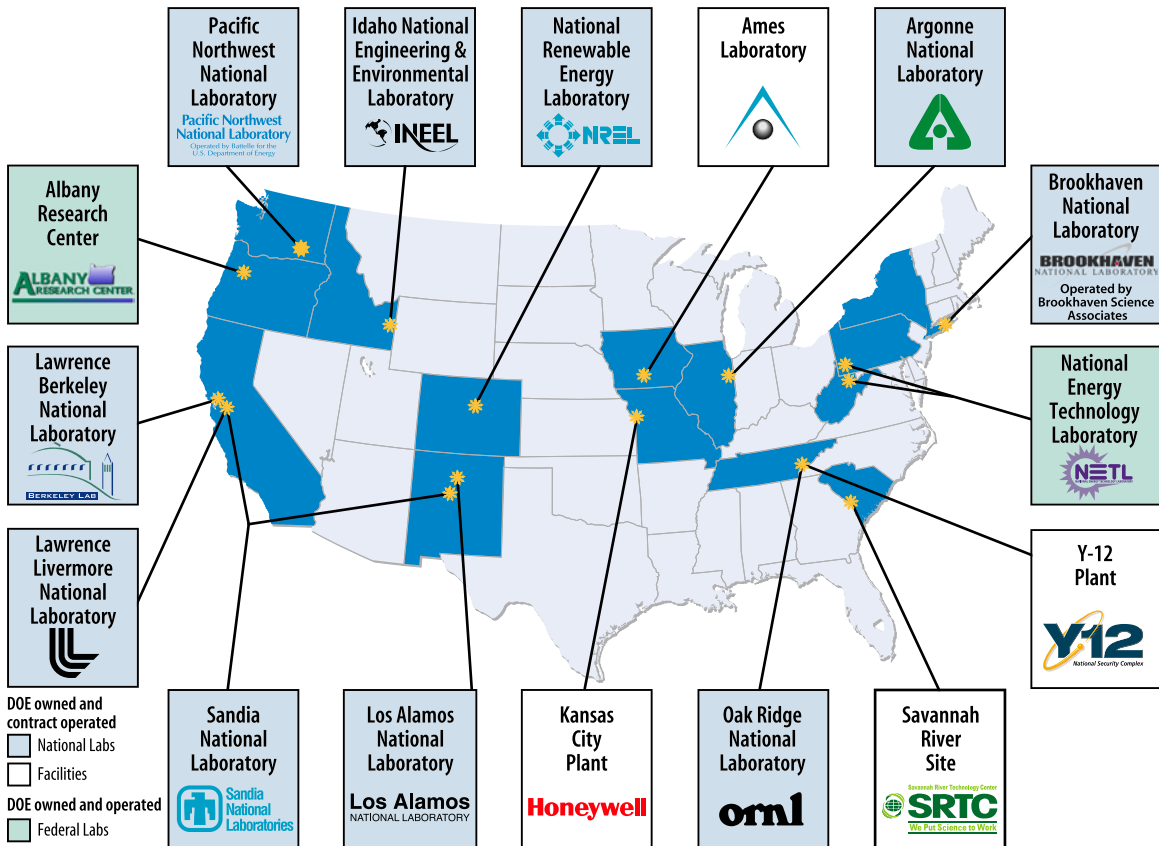
In addition to the retained rights of a paid-up government license and government march-in rights, DOE has implemented PL 98-620, requiring all waivers be subject to the "Preference for United States Industry." Also, DOE's technology transfer policy imposes a "U.S. Competitiveness Provision" that attaches to each CRADA invention. Under this provision, the contracting party agrees that any products, processes, or services for use or sale in the United States under any U.S. patent resulting from an invention (or intellectual property in the case of a CRADA) shall be manufactured substantially in the United States. DOE has shown some flexibility in the requirement of the standard clause in a number of its major partnerships with private industry. DOE's experience is that it has provided sufficient guidance for use of this provision to be able to mold cooperative research.

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