



U.S. Department of Energy  
Office of Inspector General  
Office of Audits and Inspections

# Audit Report

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The Department of Energy's Small  
Business Innovation Research and  
Small Business Technology  
Transfer Programs

DOE/IG-0876


November 2012



**Department of Energy**  
Washington, DC 20585

November 6, 2012

MEMORANDUM FOR SECRETARY

FROM:   
Gregory H. Friedman  
Inspector General

SUBJECT: INFORMATION: Audit Report on "The Department of Energy's Small Business Innovation Research and Small Business Technology Transfer Programs"

INTRODUCTION AND OBJECTIVE

The Department of Energy's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs award grants to encourage scientific effort leading to the application of new ideas and technology. The combined annual funding available for these two programs grew from \$116.8 million in Fiscal Year (FY) 2006 to \$175.5 million in FY 2012. In addition, the programs received \$92 million in American Recovery and Reinvestment Act of 2009 funding. The Office of Science's SBIR/STTR Office is responsible for managing funds from 12 of the 13 Department offices that contribute funding to the programs, with acquisition assistance from the Office of Science's Chicago Office. In FY 2012, the Advanced Research Projects Agency–Energy started an SBIR/STTR program that was not included in our audit because of its brief period of operation.

In FY 2010, which was the focus of our review, the Department received approximately 1,800 applications for SBIR and STTR for regular funding announcements, and approximately 1,000 applications for the Recovery Act funding announcements. The Department established a merit-based process for scoring grant applications to determine which were to be approved.

In our previous report on SBIR grants, *Management Controls over Monitoring and Closeout of Small Business Innovation Research Phase II Grants* (OAS-M-08-09, July 2008), we pointed out that there had been no resolution of questioned costs associated with the grants and that the grants had not been closed out in a timely manner. Due to the issues identified in our prior audit and the growth of the programs in recent years, we initiated this audit to determine whether the Department had effectively managed the SBIR and STTR programs. Additionally, we reviewed circumstances surrounding an allegation involving a potential conflict of interest.

RESULTS OF AUDIT

We found that the Department had not always effectively managed the SBIR and STTR programs. Specifically, we identified problems with grant financial management and grant award scoring. We also substantiated an allegation that potential conflicts of interest had not been identified and properly mitigated. In the area of financial management, we found that:

- Grant closeouts continued to be an issue. Since our 2008 audit, the number of SBIR grants awaiting closeout for more than 3 years had increased significantly, from 84 to 252. We also identified 12 STTR grants that had been awaiting closure for more than 3 years. The Department had not received final financial status reports for 156 of these grants, despite the Code of Federal Regulations (CFR) requirement that grantees submit the reports within 90 days of the completion of the grant term. We found no evidence that Chicago Office officials had attempted to contact half of these grantees to request closeout documents, even though its closeout procedures called for sending a letter requesting documents 15 days after the end of the award term; and,
- The Department had not fully addressed prior concerns regarding questioned costs. Although the Chicago Office had resolved questioned costs identified in our prior audit, we found approximately \$840,000 in additional questioned costs identified by Defense Contract Audit Agency (DCAA) audits or internal desk reviews that had not been resolved. Chicago Office officials told us that it was their position that these questioned costs could be resolved as late as during the closeout process. Yet, we found that some of these costs were identified as early as 2003.

A Chicago Office official told us the closeout backlog was due to an increasing workload and insufficient resources. Additionally, in response to a 2009 DCAA inquiry regarding the status of questioned costs from one of its 2006 reports, a Chicago Office contract specialist responded that the costs had not been resolved because closeouts were a low priority. To their credit, Department officials told us that they had taken a number of actions since the beginning of 2012 to address the timeliness of grant closeouts, including obtaining contractor assistance and establishing a dedicated closeout team.

During our audit, we also identified an additional \$534,000 in erroneous and unsupported costs involving bid and proposal costs, costs not allocable to the grant, excess labor charges not in compliance with Federal cost principles, and costs that lacked documentation. According to grantees, these errors occurred because of a lack of awareness of certain provisions of the cost allowability rules referenced in their award documents. In addition, some of the errors were the result of clerical mistakes that resulted in erroneous reimbursement claims.

Delays in closing out grants increased the risk that grantees may be unable to locate records for audit due to merger, bankruptcy or other change in organizational status. Without improving the timeliness of grant closeouts and resolution of questioned costs, the Department may incur unnecessary and unallowable costs. Additionally, in the event it is necessary to bring legal action on a false claim, there is a 5-year statute of limitations for criminal actions and as little as 6 years for civil actions from the time the offense was committed. This is of concern because, as of August 31, 2011, 78 of the grants awaiting closeout had been expired for over 5 years with 46 of them surpassing 6 years.

In addition to financial management concerns, we identified program issues related to potential conflicts of interest and the award selection process. Specifically, we discovered:

- Two potential conflicts of interest. In the first instance, we substantiated an anonymous allegation that a topic manager responsible for reviewing and consolidating merit review scores of grant applications had co-authored, and jointly presented, a journal publication with an applicant;
- In another conflict discovered during our test work, we found that an individual responsible for reviewing grant applications for merit, a "merit reviewer," was an employee of a subcontractor listed on the grant application. In both cases, the individuals had the ability to influence the selection of grantees. Although Department officials were not aware of either of the potential conflicts until we brought the issues to their attention, they agreed that there were appearances of conflicts of interest in both cases; and,
- A number of errors and deviations from scoring guidelines during the grant selection process. The errors and deviations, however, had no material effect on the selection of applications to be funded.

The problems we identified had not been detected by the Department. We noted that neither topic managers nor merit reviewers were required to certify for each funding opportunity announcement that they were free from conflicts of interest. Additionally, an SBIR/STTR Office official told us that the scoring guidelines were just that, guidelines, and the topic managers were not required to follow them. The lack of firm requirements in this area deprived the Department of opportunities to prevent or detect the issues we discovered. As a consequence, it lacked confidence that conflicts of interest were disclosed and properly mitigated, and that applicants were treated fairly.

To improve the SBIR/STTR programs, we made several recommendations in the areas of financial management and grant awards.

### MANAGEMENT REACTION

Management generally concurred with our recommendations and provided actions that will be taken to address issues identified in our report. The Chicago Office highlighted the progress it has made to closeout expired grants and reduce its closeout workloads to a manageable level through strengthened processes. In separate comments, an Office of Science official stated that it is implementing a web-based system to manage its grant award process that will address our concerns with reviewer conflicts of interest and scoring the applications under review.

Management's comments are included in Appendix 3.

Attachment

cc: Deputy Secretary  
Associate Deputy Secretary  
Acting Under Secretary of Energy  
Director, Office of Science  
Chief of Staff

**REPORT ON THE DEPARTMENT OF ENERGY'S SMALL BUSINESS  
INNOVATION RESEARCH AND SMALL BUSINESS TECHNOLOGY  
TRANSFER PROGRAMS**

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# THE DEPARTMENT OF ENERGY'S SMALL BUSINESS INNOVATION RESEARCH AND SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAMS

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## **Grant Administration**

Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) grants help small businesses fund the application of new technologies. Based on the provisions of the legislation creating each program and subsequent reauthorizations, the Department of Energy (Department) provides funding in phases. Phase I funding is intended to help recipients explore the feasibility of innovative concepts, while Phase II funding supports research and development efforts that often culminate in a prototype product or process that can be demonstrated to potential investors. Phase I grantees can receive up to \$150,000, while Phase II grantees can be awarded another \$1 million. Each phase involves a separate application process.

During our audit of SBIR and STTR grants, we identified issues with financial grant management, including the timeliness of grant closeouts and unresolved questioned costs; and program management, including errors in grant scoring and potential conflicts of interest that had not been mitigated.

### Financial Management

We identified financial management issues in the areas of grant closeout and unresolved questioned costs. Regulations require grantees to submit a financial status report 90 days after the completion of the award term. Further, internal control procedures call for reminding grantees of this requirement. We found that grantees had not consistently submitted financial status reports as required, and the Department had not consistently attempted to contact grantees that did not submit required reports. We also found that questioned costs identified by the Defense Contract Audit Agency (DCAA) and internal reviews had not been resolved. Finally, we identified other questioned costs during our site visits. Control problems such as these can result in the inability to audit costs or to recover amounts deemed unallowable.

## **Grant Closeout**

The Department had not closed out 264 SBIR and STTR grants in a timely manner. In fact, since our 2008 audit, the number of SBIR grants requiring closeout for more than 3 years had grown significantly, from 84 to 252 as of August 31, 2011. Additionally, our testing revealed that 12 STTR grants were also waiting to be closed out more than 3 years after the period of performance ended.

Of the 264 grants, the Department had not received the final financial status report for 156 of the grants. The Code of Federal

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Regulations (CFR) requires grantees to submit a final expenditure report within 90 days of the completion of the grant term. We found no evidence that the Office of Science officials from the Chicago Office had attempted to contact 74 grantees to request closeout documents, even though its closeout procedures called for sending a letter requesting documents 15 days after the end of the award term. Furthermore, we found that 68 grantees had submitted a final financial status report more than 3 years ago. Under the document retention requirements of 10 CFR 600.342, these grantees are no longer obligated to retain their documents unless the Department had directed them to do so by the end of the 3-year period. Thus, the Department had a 3-year window of opportunity to review and close out SBIR II grants, should it need to request supporting cost information from the grantee. We found no evidence that recipients had been directed to retain documentation.

We also found that questioned costs totaling about \$840,000 that had been identified by audits conducted by DCAA and during internal desk reviews conducted by the Chicago Office were waiting for resolution as part of grant closeout. These audits and reviews identified unsupported costs for direct labor, indirect labor and cost sharing contributions; incorrect application of negotiated indirect rates, overbilling of subcontract costs; and, inadequate cost sharing. DCAA contacted the Department in 2009 inquiring about questioned costs totaling almost \$700,000 that it had identified during a 2006 audit. A Chicago Office contract specialist responded that the costs had not been resolved because closeouts were a low priority. The Department did not contact the grantee to discuss resolution of these costs until March 2012.

A Chicago Office official told us the backlog was due to an increasing workload and insufficient resources. Department officials told us that they view closeouts as a priority and have made much progress to close out expired grants. To its credit, the Chicago Office had recently taken a number of actions to address the timeliness of grant closeouts, including setting aggressive goals, obtaining contractor assistance for closeouts, and establishing a dedicated closeout team at the beginning of 2012.

### **Questioned Costs**

During our audit, we identified an additional \$534,000 in erroneous and unsupported costs incurred by three of the seven grantees we reviewed. One grantee had relocated to new office space and in the process had reportedly destroyed records supporting about \$524,000 in costs incurred. The approximately \$10,000 in questioned and unsupported costs at two other grantees

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were related to bid and proposal costs, costs not allocable to the grant, excess labor charges that did not conform to Federal cost principles, and costs in which receipts could not be provided. Reportedly, the errors were caused by clerical mistakes and a lack of knowledge of the cost allowability rules referenced in award documents.

The lack of timely closeout increases the risk that grantees may be unable to locate records for possible audit due to merger, bankruptcy or other change in organizational status, or if the final financial status report was submitted more than 3 years ago. Additionally, in the event it is necessary to bring legal action on a false claim, there is a 5-year statute of limitations for criminal actions, and 6 years for civil actions from the time the offense was committed. This is of concern because, as of August 31, 2011, 78 of the grants awaiting closeout had been expired for over 5 years, with 46 of them surpassing 6 years. Without improvement in the timeliness of the grant closeout and review process, the Department may incur unnecessary and unallowable costs such as those we identified.

#### Program Management

We identified program management issues related to potential conflicts of interest and the award selection process. In Fiscal Year (FY) 2010, the Department received 1,469 Phase I and 357 Phase II applications to the regular funding announcements, and 935 Phase I and 105 Phase II applications for the American Recovery and Reinvestment Act of 2009 funding announcements. The applications were generally scored by a minimum of three independent merit reviewers. A topic manager reviewed the merit reviewer comments and scores, and combined the information to arrive at a total score. The total score was used to place the application into a funding category.

#### **Conflicts of Interest**

We identified two instances where the appearance of a conflict of interest had not been identified or mitigated. In one case, based on an anonymous allegation, we found a Department employee had served as a topic manager for six applications submitted by a small business, despite a known relationship with the business. Specifically, the employee and the applicant's President and Chief Executive Officer had co-authored a journal publication and made two presentations together at a conference, creating the appearance of a conflict of interest. The employee had not disclosed the potential conflict, which was the employee's responsibility according to the Department's *Merit Review Guide for Financial*



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*Assistance*, because the employee believed the application's subject matter related to a technology different from the employee's involvement with the grantee. However, the relationship of the co-authors, gives rise, in our opinion, to a potential conflict as defined by the Department because topic managers are allowed to override scores, potentially influencing ultimate award decisions.

In the second case, a technical merit reviewer was an employee of a subcontractor listed on the grant application reviewed. While this application was not funded, the appearance of a conflict existed because the reviewer had an opportunity to obtain funding for his employer. According to the Department's *Merit Review Guide for Financial Assistance*, reviewers must certify that they will not participate in the review of any financial assistance application involving a particular matter in which the reviewer has a conflict of interest or where a reasonable person may question their impartiality.

The Department had not detected the above potential conflicts of interest because topic managers and merit reviewers are not required to certify that they are free from conflicts of interest for those applications they reviewed or scored for each funding opportunity announcement. Topic managers are advised of the requirement to disclose conflicts of interest, as outlined in the Department's *Merit Review Guide for Financial Assistance*, at the time they first become involved in the SBIR and STTR grant programs, but annual certifications are not required. During the selection process, the Department informs merit reviewers via email of situations that could constitute a conflict of interest and the requirement to provide immediate notification if a conflict exists. Further, the Department alerts reviewers to its assumption that there are no conflicts if they submit a review. Because merit reviewers have not been required to acknowledge they are free from or disclose possible conflicts of interest for each funding opportunity announcement, the Department could not tell if potential conflicts of interest were considered by those reviewers that did not self-report potential conflicts.

Although Department officials were not aware of either of the potential conflicts until we brought the issues to their attention, they agreed that there were appearances of conflicts of interest in both cases. Unmitigated conflicts of interest in scoring grant applications could compromise the Department's ability to ensure that the selection process is fair and equitable.

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## Selection Process

We noted errors in scoring grant applications in our sample of 52 applications. Specifically, we found:

- Ten instances where applications had not been properly scored by topic managers. The errors were caused by scoring instructions that appeared to be confusing to the topic managers based on the multiple ways they were interpreted, or transcription errors;
- Nine instances where topic managers had overridden merit reviewer scores but had not provided a justification for doing so; and,
- Seven instances where the guidelines for calculating a score had not been followed by topic managers and deviations had not been explained.

The problems we identified had not been detected by the Department. An SBIR/STTR Office official told us that the scoring guidelines were guidelines, and the topic managers were not required to follow them. However, the Department could not ensure that applications were appropriately rated because it had not required topic managers to justify or explain deviations from the merit reviewers' scores.

While the examples above did not appear to affect the ultimate decision as to whether or not the applications would be funded, the lack of controls over scoring applications could lead to unfair treatment of applicants. Officials told us they were in the process of implementing a web-based review system that will automatically check mathematical errors, ensure electronic signatures are captured with reviews, eliminate transcription errors for review scores, and provide a time/date stamp for actions.

Management informed us that it revised the scoring process and topic managers are no longer allowed to override individual merit reviewer scores. Instead, topic managers develop their own scores based on the merit reviewer feedback. The topic managers are required to justify instances in which their scores do not agree with the consensus score of the reviewers. According to management, SBIR/STTR Program Office staff check scoring forms to ensure that they contain required justifications. Management actions, if properly implemented, should address problems we identified regarding topic managers' scoring of applications.

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**RECOMMENDATIONS**

To address the issues noted in this report, we recommend that the Manager, Chicago Office, direct acquisition officials to:

1. Develop a process to ensure that grantees are contacted after the end of the award term to request closeout documents;
2. Ensure grantees are notified of document retention requirements when contacted after the end of the award term; and,
3. Make a determination regarding the allowability of costs questioned in this report.

We also recommend that the Deputy Director for Office of Science Programs direct the SBIR/STTR Office to:

4. Develop clear examples of ways that reviewers and Department Program Officers can become conflicted and develop a means for reviewers and Department Program Officers to confirm they are free from conflicts of interest for each funding opportunity announcement.

**MANAGEMENT  
REACTION AND  
AUDITOR COMMENTS**

Management generally concurred with the report's recommendations. The Chicago Office emphasized the priority given to closing out all its grants by highlighting the progress it has made in the closeout of expired grants and its plans to reduce its closeout workload to a manageable level. It also outlined several plans to strengthen its closeout processes and improve timeliness. Furthermore, the Office of Science stated that it is implementing a web-based system to manage its grant award process. This system will require reviewers to indicate that they do not have a conflict of interest with respect to each specific application they review before granting electronic access to the application for review. However, the Office of Science disagreed with our recommendation to have Program Officers provide a certification that they do not have a conflict of interest with each application reviewed, because reporting conflicts of interest is a requirement of employment. While this may be true, providing a means for Program Officers to consider whether conflicts of interest exist with each application, such as through the web-based system being implemented, would increase transparency in the selection process. Accordingly, we modified our recommendation to remove the specificity of a certification. Additionally, the SBIR/STTR Office has already revised its scoring process to require justifications when reviewing officials deviate from the consensus of reviewer scores.

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Management's comments, included in Appendix 3, are generally responsive to our findings and recommendations.

## Appendix 1

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**OBJECTIVE** To determine whether the Department of Energy (Department) was effectively managing the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.

**SCOPE** The audit was performed between June 2011 and October 2012, at Department Headquarters in Washington, DC, and Germantown, Maryland; the Chicago Office in Argonne, Illinois; and, at seven recipient sites around the country.

**METHODOLOGY** To accomplish the audit objective, we:

- Reviewed applicable laws and regulations, as well as internal policies and procedures;
- Performed follow-up on the status of recommendations from the previous Office of Inspector General audit of SBIR Phase II grants;
- Reviewed the files for 29 grants completed in Fiscal Years (FY) 2009 and 2010 to determine grant terms and the extent of review by Chicago Office personnel in administration of the awards;
- Reviewed files for 264 Phase II grants awaiting closeout to determine whether the final financial status reports had been submitted;
- Selected a sample of 52 applications that were submitted for funding during FY 2010. This included regular and American Recovery and Reinvestment Act of 2009 funded awards. We reviewed the applications and the associated reviewer comments to determine whether the applications were reviewed consistent with the associated funding opportunity announcement;
- Visited the sites of seven recipients and reviewed supporting documentation for costs claimed by those recipients to determine the allowability of costs; and,
- Held discussions with Department and grantee officials.

We conducted this performance audit in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate

evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Accordingly, the audit included tests of controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed compliance with the *GPRA Modernization Act of 2010* and found that performance measures had not been established. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We utilized computer-processed data to identify the populations of grant awards and applications fitting different attributes so that we could select samples from them. Based on our comparisons of computer-processed data to supporting documentation, we determined that the data was sufficiently reliable for the purposes of our report.

We held an exit conference with the Chicago Office on October 17, 2012. The SBIR/STTR Office waived an exit conference.

### RELATED REPORTS

- Audit Report on *Management Controls over Monitoring and Closeout of Small Business Innovation Research Phase II Grants* ([OAS-M-08-09](#), July 2008). The audit found that the Office of Science's Chicago Office had not taken action related to resolving \$1.2 million in questioned costs from a 2001 audit, as well as issues related to timely grant closeout. Specifically, the audit found that the Chicago Office had not completed action on or was unable to provide files for 87 percent (73 out of 84) of Small Business Innovation Research Phase II (SBIR II) grants with completion dates exceeding 3 years. Since the 3-year document retention period had expired, untimely closeouts jeopardized the Department of Energy's (Department) ability to audit the costs. The audit also identified \$27,610 in questionable costs and \$749,749 in unsupported costs during testing of closed grants.
- Audit Report on *Administration of Small Business Innovation Research Phase II Grants* ([DOE/IG-0521](#), August 2001). The audit found that the Department had not appropriately verified that all costs claimed by SBIR II grantees were, in fact, allowable and used for developing the specific innovations described in the relevant grant documents. The Department generally limited its cost reviews to pre-award evaluations of the costs proposed in the applications submitted by grantees; it did not place sufficient emphasis on post-award reviews of actual costs. As a result, the audit found that the Department reimbursed grantees for questionable costs. For example, three grantees did not provide any support for about \$2.4 million in claimed costs. Further, the Department did not verify that grantees fully contributed their portion of cost sharing, which was a requirement of the grants. It was noted that 10 SBIR II grantees reported providing \$2.4 million less in cost sharing than required by the terms of the relevant grant agreements. The audit also reported that grantees were not submitting final cost data within required time frames, and grants were not being closed out in a timely manner.

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