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Office of Inspector General



Review of Forest Service's Contract for Fire Modeling Programs

**Audit Report 08017-05-Hy
March 2011**



United States Department of Agriculture
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AUDIT
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TO: Thomas L. Tidwell
Chief
Forest Service

ATTN: Donna M. Carmical
Chief Financial Officer

G. Sam Foster
Director, Rocky Mountain Research Station

FROM: Gil H. Harden /s/
Assistant Inspector General
for Audit

SUBJECT: Review of Forest Service's Contract for Fire Modeling Programs

This report presents the results of the subject audit. Your March 16, 2011, response to the draft report is included in its entirety at the end of this report. Excerpts from your response, along with the Office of Inspector General's position are incorporated into the Findings and Recommendations section of the report.

We agree with your management decisions for Recommendations 1, 2, 3, 4 and 5. Please follow your agency's internal procedures in forwarding documentation for final actions to the Office of the Chief Financial Officer. Management decision has not been reached for Recommendation 6. The Findings and Recommendations section of the report includes a description of the status of the management decision for that recommendation.

In accordance with Departmental Regulation 1720-1, please furnish a reply within 60 days describing the corrective actions taken or planned, and the timeframe for implementing the recommendation for which management decision has not been reached. Please note that the regulation requires management decision to be reached on all recommendations within 6 months from report issuance, and final action to be taken within 1 year of each management decision.

We appreciate the courtesies and cooperation extended to us by members of your staff during our audit fieldwork and subsequent discussions.

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Review of Forest Service's Contract for Fire Modeling Programs

Executive Summary

We evaluated how the Forest Service (FS) awarded and managed the 2003 Systems for Environmental Management (Contractor) Fire Modeling contract to determine whether the allegations presented in a hotline complaint were valid and whether FS awarded and managed the contract in accordance with the Federal Acquisition Regulation (FAR). We found that six of the eight hotline allegations made were valid and that FS awarded a contract that was not in accordance with several acquisition regulations. (See exhibit B) The agency paid for invoices totaling over \$724,000 that were unallowable or did not provide sufficient information to determine whether the costs were valid and reasonable (See exhibit A).

In October 2008, the Department of Agriculture's (USDA) Office of Inspector General (OIG) received a hotline complaint from FS that alleged fraud and mismanagement with a contract totaling over \$7 million. The contractor was paid to assist FS' Rocky Mountain Research Station (RMRS) with researching and developing computer programs that modeled the behavior, effect, and chemistry of fire.

To accomplish our objectives, we reviewed applicable regulations and policies; interviewed pertinent FS personnel and the contractor; examined the contract in question and the award processes; examined a sample of task orders and a sample of their corresponding invoices; interviewed users of the software; and reviewed the software source code.

During our review, nothing came to our attention to indicate that FS' staff or the contractor's employees may have engaged in fraud.¹ However, we concluded that during the administration of this contract, the [...] violated various FAR requirements.² For example, the [...] chose a contract typically used to procure information technology (IT) equipment and software to procure the fire model research and development services. The [...] was able to make improper contracting decisions without detection because management was not properly overseeing her work. The [...], in this instance, was responsible for the acquisition unit at the RMRS and her work was not reviewed by a supervisor or a different [...]. Consequently, FS did not award the contract in the best interest of the Government and did not have reasonable assurance that the services were procured in the most cost-effective manner.

In addition, the contractor was reimbursed for invoices that did not provide sufficient information to ensure work performed and billed met the corresponding contract task orders. This occurred because the [...] did not enforce contract clauses and rarely inspected the contractor's work for appropriateness or reasonableness of the invoices submitted.³ In addition, the [...] did not question the work performed by the [...] as she rarely reviewed or questioned the

¹ Fraud is generally defined as an intentional misrepresentation of material existing fact made by one person to another with knowledge of its falsity and for the purpose of inducing the other person to act, and upon which the other person relies with resulting injury or damage.

² The [...] by the FS at the time of our audit.

³ The [...] is a person designated by the [...] to assist in the technical monitoring or administration of a contract.

invoices approved by them and relied on their work. As a result, out of \$868,000 sampled, FS paid over \$26,000 in unallowable costs, and about \$698,000 without first obtaining further information to confirm that the costs were reasonable and allowable.

Recommendation Summary

FS Washington Office should obtain and review documentation supporting the various justifications listed on the acquisition plan or sole source justification document and establish a review process to ensure contracts and related modifications, issued by [...] who are heading the research acquisition unit at RMRS, comply with FAR.

In addition, RMRS should establish a process to ensure appropriate supervisory review of the approval of contractor's invoices, along with providing future contracts with a more detailed explanation concerning what information the contractor is expected to provide on the monthly invoice.

Lastly, FS should require the contractor to submit supporting documentation for all invoices submitted under this fire model contract. If the contractor is unable to provide detailed evidence of work performed and billed, FS should recover amounts for any unsupported payment.

Agency Response

FS agreed with the report's 6 recommendations. We have incorporated the FS response in the Findings and Recommendations section of this report, along with the OIG position. FS' response to the draft report is included in its entirety at the end of the report.

OIG Position

We accepted management decision for Recommendations 1, 2, 3, 4 and 5. We can accept management decision on Recommendation 6 once OIG has assurance that FS will be pursuing recovery of any contractor's invoice that is not properly supported.

Background & Objectives

Background

FS, an agency within USDA, manages approximately 193 million acres of national forests and grasslands in 44 States, Puerto Rico, and the Virgin Islands. As the caretaker for this land, FS operates a wide variety of programs, including some related to forest and rangeland research and State and private forestry assistance. These programs are administered by FS' Washington Office and by nine regional offices located in Alaska, California, Colorado, Georgia, Montana, New Mexico, Oregon, Utah, and Wisconsin. Within these regions, there are 155 national forests, 20 national grasslands, and 7 research stations. The research stations develop scientific knowledge and technology relevant to the agency's mission.

As caretaker of the national forests, FS plays a major role in the suppression of forest fires. This includes research to develop new techniques and methods to suppress forest fires. This research includes the development of computer software that models the behavior, effects, and chemistry of fire. FS and other entities around the world use the research to analyze and suppress fires more safely and effectively. FS' Rocky Mountain Research Station (RMRS) located in Fort Collins, Colorado oversees the Missoula Fire Sciences Laboratory, which conducts the research that addresses the four stages of wildland fires: (1) the pre-fire environment, (2) the combustion and fire behavior processes, (3) the immediate (first-order) fire effects, and (4) longer-term (second-order) fire effects. It also conducts fundamental and applied research related to the wildland fire process, terrestrial and atmospheric effects of fire, and ecological adaptations to fire. This research is conducted under the authority of the Fire, Fuel, and Smoke Science Program, which has six research areas:

- Physical Fire Dynamics,
- Fuel Dynamics,
- Smoke Emissions and Dispersion,
- Fire Ecology,
- Fire and Fuel Management Strategies, and
- Science Synthesis and Delivery.

The Systems for Environmental Management Company, Incorporated (contractor), has been contracted to work with FS since 1977 to develop and upgrade software models capable of aiding in the suppression of forest fires. From 1977 to 1997, RMRS used a research agreement with the contractor to perform work through a joint venture. However in 1997, RMRS received funds from other Federal agencies to continue the fire model research and in accordance with appropriations law, RMRS could no longer use a research agreement. Instead, RMRS used a contract to acquire the research and development services needed.

In 1997, RMRS awarded the first competitively based contract for these services to the contractor. In 2000 and 2003, RMRS awarded subsequent non-competitive contracts to continue developing the fire models to the contractor as the sole source for the research and development

services. For the contract, RMRS used a contract for commercial items, and awarded it with a price rate that was not subject to adjustment.⁴

On October 16, 2008, the [...] at RMRS filed a complaint through the USDA OIG's Hotline requesting an independent external audit to rule out any possibility of fraud, waste, and abuse; and alleging that the [...] mismanaged contract AG-82FT-B-06-0005.⁶ The [...] alleged that the [...]: (1) used an improper method to award the contract; (2) allowed the contractor to use contract funds in violation of appropriation laws; (3) used an erroneous industry classification code to establish a sole source contract; (4) allowed the contractor to submit task orders and invoices for services that did not meet the contract's statement of work; (5) allowed the contractor to evade task order and invoice submission requirements; (6) violated Federal ethics requirements related to conflicts of interest; (7) established websites that violated OMB guidelines; and (8) did not make FS the owner of the software developed by the contractor. (See exhibit B) Overall, the [...] was also concerned that the [...] had modified the contract to allow researchers to request services, award task orders, and pay for work performed even after the contract expired. The USDA OIG Hotline Staff evaluated the complaint and allegations and referred it to us for further action.

Objectives

The objectives of this audit were to determine if the allegations in the hotline complaint were valid and to verify that FS awarded and managed the cited contract in accordance with FAR.

⁴ A commercial item contract is used for acquiring any item that is of a type customarily used by the general public.

⁵ The [...] cited in the Hotline complaint was [...] by the FS.

⁶ The contract was awarded to Systems for Environmental Management Company, Inc., to develop and upgrade software models used to aid in the suppression of forest fires.

Section 1: Management Controls of Contracting

Finding 1: Improper Contract Administration

The contract was not awarded in accordance with several provisions of FAR. The violations included: (1) an improper contracting method, (2) the misclassification of the contractor as a small business, (3) an open-ended statement of work for the contract, (4) a contract extension that exceeded the maximum time period allowed by FAR, and (5) an unfair competition since the [...] did not open the competition to multiple contractors.⁷ The [...] was able to violate FAR and make improper contracting decisions without detection because FS had not established a process to review contracts when the acquisition director was awarding them. The [...], in this instance, was the [...] at RMRS. Consequently, the agency did not award the contract in the best interest of the Government and does not have reasonable assurance that the services were procured in the most cost-effective manner.

Management has a fundamental responsibility to develop and maintain an effective internal control process that includes separating duties among different people to reduce the risk of error or fraud. This includes separating the responsibilities for authorizing transactions, processing and recording them; reviewing the transactions; and handling any related assets.⁸ Before it issues a contract, FS requires that a [...] review the work of another [...] to ensure that the contract complies with FAR.⁹ This review is conducted before the contract is awarded and signed, includes a review of all files to ensure all necessary documents are present, verifies that appropriate clauses are included in the contract, and involves an assessment of the solicitation and award process. In addition, the reviewer verifies that task orders specify deliverables as well as time periods in which such deliverables are due. However, we found that FS had not established similar controls to use when the contracting instrument was generated by the [...], who is responsible for managing all the [...].

For the research and development of fire models, the [...] awarded a contract without an external review of the actual contract. The [...] submitted to the Washington Office, for review and approval, an acquisition plan and a sole source justification prior to awarding the contract. Our review disclosed this was the only external review performed for the contract because FS guidance requires that contracts awarded as other than full and open competition be approved by the Washington Office Acquisition Division when the transaction exceeded \$100,000. The document submitted for this contract, for Headquarters' approval, included a series of questions and answers stating why the [...] was awarding the contract to the contractor without opening competition to other contractors. According to the Washington Office this review is not in depth, as they do not request the actual contract file, and seldom request further explanation from the [...] to determine if the contracting instrument or exception requested by the [...] is appropriate. For this contract, the Washington Office reviewed the justifications and based on

⁷ The [...] by the FS at the time of the audit; as a result we cannot determine the reasoning for many of the contracting decisions.

⁸ GAO/AIMD-00-21.3.1, *Standards for Internal Control in the Federal Government*.

⁹ When the contract exceeds the warrant of the [...], the [...] may be responsible for awarding the contract because he/she may have a larger dollar warrant.

the limited information presented, approved the sole-sourcing and stated that this approval would be the final approval for sole-sourcing this contract and that the unit would need full and open competition for any new request of these services.

The Washington Office lacked an effective review process, which increases the risk of FAR violations and other mistakes not being prevented or promptly detected. Our review of the contract disclosed that the software did not meet the definition of a major system.¹⁰ An effective review of the contract documentation by either Washington Office personnel or another [...], prior to approval, would have provided Forest Service the opportunity to avoid the numerous mistakes and FAR violations the [...] made, which we detail below.

FAR VIOLATIONS

Incorrect Type of Contract Used

The [...] used a contract for commercial items, which is typically used by agencies to purchase objects and goods or to acquire services. According to FAR, a contract for “commercial items” is used to purchase or acquire any object or good that is customarily used by the general public.¹¹ For instance, if an agency sought to acquire licenses of a commercially and readily available piece of software, then it should use a commercial item contract. When purchasing items with a contract for commercial items, the Government does not have to conduct a comparison of the cost of performing work in-house versus contracting the work, as it is required to do when procuring services. Thus, using a contract for commercial items could have resulted in the agency not obtaining services at the most beneficial cost.¹² Further, a review of the contract files disclosed that since 1997, FS has used the incorrect type of contract to develop fire models that were highly specific to FS and other agencies with fire suppression missions, and not customarily used by the general public. The contractor performed work such as analyzing data relating to fires, using that fire-related data to improve existing models, debugging software, writing training guides for the software, and writing and publishing original research. Some of this work was original research; other work focused on maintaining FS’ existing fire-modeling software. We determined that using a contract for commercial items was inappropriate because the work performed did not relate to the development of a major information technology application, as the [...] stated in the justification form used to award the contract to a sole source. When we discussed this issue with the Washington Office, FS officials agreed the incorrect type of contract was used and explained that many [...] would improperly classify the procurement as a commercial item when they saw the words database and models in the requisition description.¹³

We concluded that the [...] should have used a contract for research and development to procure the majority of the work performed as the unit was using research and development services

¹⁰ According to OMB Circular No. A-130, *Management of Federal Information Resources*, a major system is an information system that requires special management attention because of its importance to an agency’s mission; its high development, operating, or maintenance costs; or its significant role in the administration of agency programs, finances, property, or other resources.

¹¹ FAR, March 2005, Part 2.101.

¹² OMB Circular No. A-76, *Performance of Commercial Activities*, August 1993.

¹³ We could not determine how many of the contracting decisions were made, such as the contract method used, because the [...] who awarded the contract [...].

from the contractor, and used a contract for temporary services for the rest of the work, such as debugging software.¹⁴ Washington Office officials agreed with our conclusion and stated they did not understand how the contract could justifiably be described as a contract for commercial items.

Contractor Misclassified as a Small Business

According to the 2003 contract file, the research station reported the contract was awarded to a small for-profit business, even though the contractor was a nonprofit organization.¹⁵ FS did not comply with FAR, which states that it is the policy of the Government to provide practicable opportunities in its acquisitions to small business.¹⁶ FAR defines a small business as a business entity that is organized for profit and employs up to 1,000 employees.¹⁷ The [...] classified the nonprofit organization as a small business based on the number of employees but did not consider the requirement that the entity is to be organized for profit. As a result, FS misreported the percentage of contracts it awarded to small businesses and, by awarding a contract to a nonprofit organization, it affected the fair competition of small businesses interested in providing these services to the Government at a cheaper cost. Since the [...], we could not determine why she misclassified the contractor.

Open-Ended Statement of Work

We found that the [...] approved a task order submitted by the Missoula Forestry Sciences Lab, for about \$14,968, to research wolverines. The task order did not show what impact this research work would have, if any, in the development of fire models. Further review of the contract disclosed that the research station included an open-ended statement of work, which allowed FS' Fire Lab scientists to write task orders which did not relate to the development or maintenance of fire models. FAR requires the agency to clearly define services and appropriate performance standards so that the agency's requirements can be understood by potential bidders. It also requires that contract performance is in accordance with the contract terms and meets conditions in line with the agency's requirements.¹⁸ When we questioned the relation of the task order to fire modeling, FS admitted this project was not related to fire modeling. FS was able to acquire services without following the appropriate acquisition regulations, including full and open competition for the contract. Since this project did not relate to modeling fires, FS should have used a new contracting instrument, if it believed that research into wolverines was necessary. Washington Office officials agreed the statement of work as written was too general and the task order was inappropriate.

¹⁴ A contract for temporary services is used when there is a need for brief or intermittent use of the skills of the private sector.

¹⁵ This violation, in and of itself, does not render the contract invalid. If a contract is listed as a small business "set-aside" prior to award, this does not prohibit an agency from using this business when properly documented. A set-aside contract is a contract the agency will be awarding to a specific group of contractors, such as "service-disabled veterans."

¹⁶ FAR, Part 19.20, March 2005.

¹⁷ 13 CFR Part 121 SBA SBIR Small Business Size Regulations, dated January 2005. The General Service Administration's website, Doing Business with General Service Administration, Small Business, defines a small business as an entity that is organized for profit with up to 1,000 employees, depending on the type of service being provided.

¹⁸ FAR Part 37.503 Agency-head responsibilities, March 2005.

Contract Extended Beyond the 5-year Limit

The [...] extended the contract beyond limits set in FAR requirements. Under FAR, contracts may be extended up to four times beyond their base year, but not to exceed five years.¹⁹ The only instance where a contract could be extended beyond five years is when the deliverable is a major information technology system; however, in this case, the fire modeling software did not meet OMB's definition of a major system.²⁰ The supporting contract files we reviewed provided no explanation for why the [...] extended the contract. Washington Office officials stated they were not involved with this modification because it only extended the life of the contract, which is considered common practice for a contract. The Washington Office stated that a review of a modification is performed only when the modification involves a change in scope or requirement that is considered outside the [...] authorities. Washington Office officials stated that extending the contract expiration date is considered to be part of the [...] authority. They believed there was no reason for the [...] to extend the contract beyond the 5 years allowed; however, the [...] signed a contract amendment eliminating this requirement. FS employees then issued task orders totaling more than \$725,000 after the contract should have expired.

IMPROPER CONTRACTING DECISIONS

Contract Awarded without Full and Open Competition

Instead of soliciting multiple bids for the fire-modeling contract, the [...] decided to procure services through a single source (i.e. sole-source). In principle, the Government prefers full-and-open competition, but does allow only one contractor to apply for a contract in certain situations. However, [...] must properly support their decisions and maintain justifications in the contract's files.²¹ According to the fire-modeling contract, the [...] justified her decision to sole-source because the contractor was the only one that could perform the tasks required by the contract and it was the continued development or production of a major system or highly specialized equipment. However, as discussed previously, we found that the fire modeling software was not a major system and, according to a [...], only about 25 percent of the task orders submitted related to revision or maintenance of the fire-modeling software. Since the remaining task orders related to research services, FS may have been able to find more contractors able to provide some type of services at a lower cost to the Government. According to FS research station officials, the contractor's employees are familiar with the fire modeling software since they have worked on this project since 1977. FS agrees that working with this single contractor over a period of time has created a situation of mutual dependence. We concluded that overreliance on this contractor does not lead to a contracting environment focused on delivering clearly defined products. As discussed earlier, Washington Office officials informed the unit that any future work in this area would need to be done through fair-and-open competition.

We interviewed personnel at RMRS, the Missoula Fire Science Laboratory, and the Washington Office to determine why there was no monitoring, as well as to quantify a dollar amount

¹⁹ FAR, Part 17.204 Options, March 2005.

²⁰ FAR, Part 17.204 Options, March 2005 and OMB Circular No. A-130, *Management of Federal Information Resources*, November 2000.

²¹ FAR, Part 4.803, March 2005.

associated with FAR violations and improper contracting decisions. However, due to the turnover within the research station acquisition staff, and a lack of supporting documentation maintained by the [...] at RMRS, we were unable to determine why the [...] did not follow FAR.

Further, local and Washington Office officials stated that [...] at RMRS are often under a great deal of pressure to approve contracts that researchers at their station judge to be necessary to complete their projects, and many researchers are more accustomed to dealing with cooperative agreements rather than contracts. A researcher might, for instance, want to work with a specific individual, but the [...] is required to offer the contract up for bid to different contractors. Thus, Washington Office officials believe this situation may have influenced some of the [...] decisions.

Officials at the Washington Office Acquisitions Management Unit stated that a [...] might be instructed to find a way to award a contract, no matter the obstacles. Washington Office officials stated this is particularly true because contracts for research work are more complex and do not always fall into common use contracts for other sorts of work, such as janitorial or road work. The combination of pressure and unconventional work can create a contracting environment where the rules are likely to be bent in order to complete a project.

Reviewing contracting decisions is critical to ensure [...] are procuring goods and services in the most cost-effective manner and protecting the Government's interest. OIG believes that since RMRS contracts for other types of research activities and follows the same award process for all contracts, there may be other contracts in which similar FAR violations have occurred.

Recommendation 1

Implement a contract review process to ensure that contracts awarded by the station's [...] of the Acquisition Division comply with FAR.

Agency Response

The FS concurs with this audit recommendation. There is an existing system in place for progressive levels of review of all [...] work and for the submission of documentation that supports the various justifications listed on the acquisition plan or sole-source justification documentation. These procedures are outlined in the Federal Acquisition Regulation (FAR), and its supplementing and implementing instructions in the Department of Agriculture Acquisition Regulations (AGAR) and FS Acquisition Regulations (FSAR). In response to this audit recommendation, the Deputy Chief for Business Operations will issue a guide developed by the AQM staff that discusses the contract review process. The guide will enumerate the documents that are required to be submitted to the Washington Office (WO) Acquisition and Management's Policy Branch and give a citation and authority.

OIG Position

We accept FS' management decision.

Recommendation 2

Require, for Washington Office contract reviews, the submission of documentation that supports the various justifications listed on the acquisition plan or sole-source justification document.

Agency Response

The FS concurs with this audit recommendation. There is an existing system in place for progressive levels of review of all [...] work and for the submission of documentation that supports the various justifications listed on the acquisition plan or sole-source justification documentation. These procedures are outlined in the Federal Acquisition Regulation (FAR), and its supplementing and implementing instructions in the Department of Agriculture Acquisition Regulations (AGAR) and FS Acquisition Regulations (FSAR). In response to this audit recommendation, the Deputy Chief for Business Operations will issue a guide developed by the AQM staff that discusses the contract review process. The guide will enumerate the documents that are required to be submitted to the Washington Office (WO) Acquisition and Management's Policy Branch and give a citation and authority.

OIG Position

We accept FS' management decision.

Finding 2: Unallowable and Unreasonable Contract Reimbursements

The contractor was reimbursed for invoices that did not provide sufficient information to ensure work performed and billed met the contract's corresponding task orders. This occurred because the [...] did not enforce contract clauses and rarely inspected the contractor's work for the appropriateness and the reasonableness of the invoices submitted.²² In addition, the [...] did not question the work performed by the [...] as she rarely reviewed the invoices they approved and relied on their work. As a result, out of \$868,000 sampled, FS paid over \$26,000 in unallowable costs, and about \$698,000 without first obtaining further information to confirm costs were reasonable and allowable (see exhibit A).

Regulations state that both the [...] and [...] should challenge the validity and reasonableness of any specific cost submitted by the contractor.²³ The agency's staff should inspect contractors' work to ensure that the Government receives full value for the dollars spent.²⁴ Since FS awarded this contract to acquire specific products and services related to fire model software development, we understand, based on discussions with FS staff, that valid and reasonable costs would consist of those related to the actual development of the fire models, testing of the models, documentation of the testing, and related training materials being produced.

In addition, FAR states that although the [...] may delegate to a representative some of the oversight tasks related to the contract, the [...] is ultimately responsible for safeguarding the interests of the Government in its contractual relationships by ensuring the contractor meets the terms of the contract.²⁵ The [...] signature, as it is the one required for payment of a contractor's bill, represents full assumption of responsibility and a clear statement that the work has been satisfactorily accomplished.²⁶

According to the [...] interviewed, their duties included reviewing the contractor progress reports and payment vouchers for adherence to project parameters; assisting the contractor with technical guidance; ensuring work was in accordance with contract requirements; and advising the [...] of acceptable and unacceptable work received from the contractor. However, the [...] were not performing the tasks to the full extent required because they were relying on FS researchers to raise concerns or question invoice discrepancies. If the researchers did not question a vague invoice, the [...] submitted it for payment without questioning it. The [...] stated that occasionally they would consult with the researchers about the validity of the invoices; however, such discussions were not documented in the contract's file. The [...] stated that, on five occasions, they discussed with the researchers the invoices' description of work because issues were raised by the researchers. On two occasions, the [...] questioned the invoice because other FS staff expressed concerns about charges in the invoices.

After discussions with the contracting staff, we found that [...] at RMRS often relied on [...] to review and approve invoices. Even the [...] who succeeded the [...] who made most of the

²² The [...] is a person designated by the [...] to assist in the technical monitoring or administration of a contract.

²³ FAR, Part 31.201 – 2 & 3 Determining allowability and reasonableness, March 2005.

²⁴ Forest Service Handbook, 6309.11, 24.02, Objectives.

²⁵ FAR Part 1.602 – 2 [...] Responsibilities, March 2005.

²⁶ Forest Service Handbook, 6309.32, Exhibit 1-2.

decisions cited in this report, and made the hotline complaint that prompted this report, stated that she rarely reviewed the invoices they approved and did not see her signature as the “be-all/end-all” for invoices. Her understanding of her role contradicts what regulations require from the [...]. Since the [...] did not question the [...]’ work, the [...] continued their limited review.

When we reviewed 202 judgmentally sampled invoices totaling over \$868,000, we found that in 157 instances the contractor was reimbursed for unallowable, unreasonable, or inappropriate costs. For example, 28 invoices, totaling over \$26,000 contained unallowable costs for travel since none of the invoices contained evidence of a preauthorization form for the travel. The contract’s clause C-20 states that travel, which is in support of contract performance, shall require the [...] prior approval. When we asked the [...] about why they had not preauthorized this travel, they stated that this was how they had operated for years with this contractor, and nobody had questioned the process before this instance.

In addition, for 129 of the 202 invoices, totaling about \$698,000, the contractor was reimbursed for costs, although it did not provide sufficient information to determine the reasonableness of the costs billed. For example, the contractor submitted an invoice that shows only that an “employee worked 281.5 hours in a month on completing the first draft of the Area Change Tool; setting up files and fixing bugs in Fire Regime Condition Class Mapping Tool; attending a three day working meeting at Fire Labs; and working on revisions and new programming requests/additions to the Area Change Tool.” The invoice does not provide sufficient information for the reviewer to determine when the contractor performed the work or when FS will receive the final product. Given the high number of hours worked (an ordinary working month is only 160 hours), we believe that the [...] or the [...] should have questioned the invoice and sought additional information. As the [...], we could not determine why this particular invoice was not questioned.

Likewise, FS authorized the contractor to assist with some technical writing related to the “LANDFIRE” model; however, invoices related to the order show the contractor billed the agency for writing documents related to grizzly bears and bees, with no clear explanation on how these documents related to the research and development of fire models.²⁷ Since the invoice did not clearly relate to the intended work, the [...] should have questioned the invoice and asked the contractor to provide more information, but we found that this was not done.

A detailed review of the contract disclosed it provided very limited information about invoices, as it only states that the “[c]ontractor shall submit monthly invoices to the Government detailing costs for each Task Order.” The contract did not explain what constitutes a detailed invoice or how the invoice should be assembled. The lack of specifications in the contract places a greater burden on both the [...] and the [...] to adequately review monthly invoices to ensure that FS receives products for which the task orders and overall contract was intended.

²⁷ The LANDFIRE model provides spatial data needed to support the National Fire Plan and accurately identify lands with hazardous fuel build-up or extreme departure from historical conditions. It allows users to download geospatial layers and data products that depict the nation’s major ecosystems, wildlife habitat, vegetation or canopy characteristics, landscape features, and wildland fire behavior, effects, and regimes.

We concluded that the failure of the [...] and [...] to question or closely review invoices was a significant breakdown of RMRS' oversight of the contract. In order to remedy this situation, RMRS should specify in the contract what constitutes appropriate invoicing and procedures for adequate review of all future invoicing for contracts. Further, since our review disclosed many unallowable and unreasonable costs paid, we recommend that RMRS request documentation from the contractor to review and determine if it should recover funds for expenses or hours that the contractor cannot fully support.

Recommendation 3

Require RMRS to establish a process to ensure appropriate supervisory review of the approval of contract invoices.

Agency Response

The FS concurs with this audit recommendation. To ensure appropriate supervisory review of the approval of contract invoices, RMRS will establish a process that includes:

- Sampling of invoices of the most “complex” RMRS contracts.
- Verification of training of [...], annually and as applicable. The acquisition community as a whole for the FS is placing a strong emphasis on the [...] duties and responsibilities by ensuring each [...] has had the required training for their [...] certification.

Incorporation of the RMRS “Internal Process Plan” (internal station-wide AQM program review) that will assist with the invoice review process.

OIG Position

We accept FS' management decision.

Recommendation 4

Ensure future contracts provide more detailed information as to what is expected from the contractor on monthly invoices.

Agency Response

The FS concurs with this audit recommendation. In response to the audit recommendation, the following actions have been or will be taken:

- RMRS issued letters to all vendors with current contracts explaining exactly what the invoice needs to convey, prior to being approved for payment, i.e., number of hours worked and what percent of deliverables have been met.
- NFC issued a letter to all Regional, Station, and Area offices on December 12, 2007, detailing the information required on invoices and will begin issuing the NFC letter and/or requirements with all new RMRS complex contract awards.

OIG Position

We accept FS' management decision.

Recommendation 5

Require the contractor to submit supporting documentation for all invoices submitted under this fire model contract. If the contractor is unable to provide detailed evidence of work performed and billed, FS should recover amounts for any unsupported payments.

Agency Response

The FS concurs with this audit recommendation. In response to the audit recommendation, the following actions will be taken by RMRS:

- Conduct a meeting with the contractor at the appropriate time to discuss the OIG audit findings and to request supporting documentation that includes detailed information of work performed. RMRS staff has prepared for that meeting.
- [...] will review and analyze the Statement of Work's submitted with the task orders and compare against the invoices to ensure the work performed meets the contract's clauses.
- [...] to report the results of the review to the RMRS Acquisition Manager by the 20th of each month until complete.

OIG Position

We accept FS' management decision.

Recommendation 6

Recover questioned costs of \$724,000 unless the contractor provides detailed evidence of work performed and billed. Recover any other questionable or unsupported costs based the on review performed in Recommendation 5.

Agency Response

The FS concurs with this audit recommendation. In response to the audit recommendation, the following actions have or will be taken by RMRS:

- The review of the OIG spreadsheet regarding the contractor invoices has been completed.
- Plan to conduct a meeting with the contractor to request and obtain supporting documentation for the invoices in question. Part of that planning depends on completion of verification of the magnitude of the problem. See number 5 above.
- Depending on contractor's cooperation to provide the proper records, the Agency will assess its options for recovery.

OIG Position

We do not accept FS' management decision. FS concurs with our audit recommendation and will be taking action to review contractor's invoices and supporting documentation. However, FS will only be assessing its options for recovery, instead of establishing plans to pursue recovery of the contractor's unsupported invoices. To reach management decision, the FS needs to issue a demand letter to the contractor for the \$724,000 cited in the Finding and establish a receivable in the agency's accounting system. The receivable can be reduced when the contractor provides adequate supporting documentation for the questioned costs.

Scope and Methodology

On October 16, 2008, the acquisition staff at RMRS made a hotline complaint that alleged fraud and mismanagement involving a contract awarded to develop fire models on June 9, 2003. This contract was set up containing a base year with the option for 4 additional years, with each year not to exceed \$2 million in costs. FS paid a total cost of about \$7.5 million from 2003 through 2009 on this contract. Our review focused on how RMRS awarded and managed the contract awarded in 2003.

We performed fieldwork from December 2008 through July 2009 at the FS' Washington Office in Rosslyn, Virginia; RMRS in Ft. Collins, Colorado; and the Missoula Fire Science Laboratory in Missoula, Montana. Additional work associated with the fire modeling websites ownership was performed through December 2010.

To accomplish our audit objectives, we:

- Reviewed pertinent FAR and agency policies and procedures to familiarize ourselves with the requirements, scope, and current FS procedures for the administration of contracts.
- Interviewed FS officials at the Washington Office, RMRS, and the Missoula Fire Science Laboratory;
- Interviewed the contractor and his employees;
- Examined the contract to ensure compliance with all relevant sections of FAR;
- Reviewed the contractor's nonprofit and small business status to determine if it had changed during the life of the contract, or if it was changed to allow for any unfair advantage.
- Selected a sample of task orders and corresponding invoices by judgmentally selecting task orders that would encompass large dollar amounts and incorporate all aspects of work performed on this contract from June 2003 to January 2009.²⁸ Our judgmental sample included 202 invoices from 48 of 190 total task orders from this contract. The task orders totaled over \$2.25 million of the almost \$7.5 million awarded, while the corresponding selected invoices totaled over \$868,000;²⁹
- Reviewed invoices to ensure work met the task orders' statements of work and that expenses were supported with proper documentation;

²⁸ Tasks ranged from technical writing to computer programming to data analysis.

²⁹ OIG judgmentally sampled at least two invoices per task order. Often we selected more invoices when it appeared a problem was identified with the task order, or previous invoices selected.

- Interviewed officials at FS, the National Park Service, the Wildland Fire Technologies Company, the Montana Department of Environmental Quality, the ExxonMobil company, the University of Montana, and the Colorado State University, to verify that the software model was functioning properly; and
- Reviewed five of the fire models (FARSITE, FireFamily Plus, FlamMap, Behave, and Wildfire Assessment System) produced from this contract and their corresponding source code to ensure the produced modeling codes met the agency's intended purpose. We reviewed software security assessments ensuring the models were tested and risks were identified prior to release to the public. Additionally, we reviewed regulations to ensure websites were created in compliance with Federal regulations, and no copyright or licensing infringements occurred.

We conducted our 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 objectives.

Abbreviations

AQM	Acquisition Management
[...]	[...]
FAR	Federal Acquisition Regulation
FS	Forest Service
FRCC	Fire Regime Condition Class
FY	Fiscal Year
OGC	Office of the General Counsel
OIG	Office of Inspector General
RSA	Regional, State, and Area Offices
RMRS	Rocky Mountain Research Station
Contractor	Systems for Environmental Management
USDA	United States Department of Agriculture

Exhibit A: Summary of Monetary Events

This table describes the areas in which we questioned costs and recommend the recovery of at least \$724,000.

Finding No.	Description	Amount	Category
2	Contractor did not provide sufficient information to determine costs were reasonable or allowable.	\$698,000	Questioned Costs, Recovery Recommended
2	Invoices contained unallowable cost for travel.	\$ 26,000	Questioned Costs, Recovery Recommended

Exhibit B: Response to Hotline Complaint Related to Fire Effects Modeling Programs

Exhibit B – Page 1 of 2

This table presents the hotline complaint’s questions and what we found in our audit.

#	Question	Results
1	Was the contracting method used for the Systems for Environmental Management contract valid?	No. FS did not follow FAR contracting regulations when awarding the fire-modeling contract. Specifically, FS acquired research and development services using a commercial items contracting instrument, as discussed in Finding 1.
2	Did the use of contracting funds violate any appropriation laws?	No. OIG obtained copies of payments made to the contractor for RMRS work invoiced during FY 2003 through 2009. We looked at the fund codes, budget object codes and related payments for the task orders which were judgmentally selected. We found work was performed using Forest and Rangeland Research Funds, and Fire Suppression and Fire Operations. Some task orders were obligated in one fiscal year and not invoiced until the following fiscal year. This practice is allowed under appropriations law for the purpose of “making payments.”
3	Did the contractor’s industry classification status allow FS to contract them sole-source?	Industry classification codes had no bearing on FS’ reasoning for sole-sourcing.
4 and 5	Did the task orders and services rendered meet the contract’s statement of work and contract requirements?	No. Task orders did not always meet the contract statement of work, nor did they always agree with the work actually performed, as reported by the contractor under the task order. See Finding 2.
6	Did the contracting staff violate any of the governmental ethics requirements, specifically those related to conflict of interest?	No. We interviewed two [...] employees, now employed by FS. They did not disclose any direct conflict of interest as described by 5 CFR 2635.

Exhibit B: Response to Hotline Complaint Related to Fire Effects Modeling Programs

Exhibit B – Page 2 of 2

7	Did the Website Development violate OMB policies related to ownership of Federal public websites?	<p>Yes. The Fire Lab websites used to distribute the fire models do not meet the requirements of OMB’s policies for Federal websites.</p> <p>We reviewed five websites and found none of the websites have an approved domain name or the agency’s annual performance plan. In addition, four of the websites contain advertising or logos for private organizations. Furthermore, three do not contain Section 508 accessibility information, a privacy policy, information quality guidelines, or a link to USA.gov as required by OMB. Also, two websites fail to provide Equal Employment Opportunity statistics and an external linking policy. Lastly, one website does not clearly show an agency logo or sponsorship and does not contain a method for public users to communicate with the agency.</p> <p>These violations occurred because Fire Lab began using websites before OMB’s policies were developed, and the websites were owned by the contractor and stored in the contractor’s servers.</p> <p>In December 2007, Fire Lab began discussions about how to modify the websites to bring them into the agency’s domain website and in compliance with OMB regulations; however, delays occurred as the agency determined which websites should be incorporated under the agency’s domain. Further delays occurred as individuals involved in the process retired. As of December 2010, the OCIO is working with OMB to move the domains into the agency’s website.</p>
8	Does FS have ownership of the deliverables?	<p>Yes. FS owns the research and fire models developed as covered by contract clause C-26: Government Rights in Software, Data, and Information.</p>

USDA'S

FOREST SERVICE

RESPONSE TO AUDIT REPORT



Forest
Service

Washington
Office

1400 Independence Avenue, SW
Washington, DC 20250

File Code: 1430

Date: March 16, 2011

Route To:

Subject: Response to Office of the Inspector General Official Draft Report Number 08017-05-Hy, "Forest Service's Contract for Fire Modeling Programs"

To: Gil H. Harden, Assistant Inspector General for Audit, Office of Inspector General

The Forest Service has reviewed the Office of the Inspector General (OIG) draft Audit Report No. 08017-05-Hy, Forest Service's Contract for Fire Modeling Programs. The agency appreciates OIG's review of its contract process at the Rocky Mountain Research Station and Washington Office. The Forest Service generally agrees with the findings and recommendations and the need to address these issues.

The enclosed response outlines our proposed actions for each of the audit recommendations. Please contact Donna Carmical, Chief Financial Officer, at (202) 205-1321 or dcarmical@fs.fed.us with any questions.

/s/ Thomas L. Tidwell
THOMAS L. TIDWELL
Chief

Enclosure

cc: Cloetta J Schroeder, George S Foster, Al Munoz, Robert Jaeger, Barbara Cooper, Sandy T Coleman, Erica Y Banegas



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USDA Forest Service (FS)

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Office of Inspector General (OIG) Audit Report No. 08017-05-Hy
Forest Service Contract Review for Fire Modeling Programs

Forest Service Response to the Official Draft

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OIG Recommendation 1: Implement a contract review process to ensure that contracts awarded by the station's Acquisition Director comply with FAR.

FS Response to Recommendation 1: The FS concurs with this audit recommendation. There is an existing system in place for progressive levels of review of all [...] work and for the submission of documentation that supports the various justifications listed on the acquisition plan or sole-source justification documentation. These procedures are outlined in the Federal Acquisition Regulation (FAR), and its supplementing and implementing instructions in the Department of Agriculture Acquisition Regulations (AGAR) and FS Acquisition Regulations (FSAR). In response to this audit recommendation, the Deputy Chief for Business Operations will issue a guide developed by the AQM staff that discusses the contract review process. The guide will enumerate the documents that are required to be submitted to the Washington Office (WO) Acquisition and Management's Policy Branch and give a citation and authority.

Estimated Completion Date for Recommendation 1: September 30, 2011

OIG Recommendation 2: Require, for Washington Office contract reviews, the submission of documentation that supports the various justifications listed on the acquisition plan or sole-source justification document.

FS Response to Recommendation 2: The FS concurs with this audit recommendation. There is an existing system in place for progressive levels of review of all [...] work and for the submission of documentation that supports the various justifications listed on the acquisition plan or sole-source justification documentation. These procedures are outlined in the Federal Acquisition Regulation (FAR), and its supplementing and implementing instructions in the Department of Agriculture Acquisition Regulations (AGAR) and FS Acquisition Regulations (FSAR). In response to this audit recommendation, the Deputy Chief for Business Operations will issue a guide developed by the AQM staff that discusses the contract review process. The guide will enumerate the documents that are required to be submitted to the Washington Office (WO) Acquisition and Management's Policy Branch and give a citation and authority.

Estimated Completion Date: September 30, 2011

OIG Recommendation 3: Require RMRS to establish a process to ensure appropriate supervisory review of the approval of contract invoices.

FS Response to Recommendation 3: The FS concurs with this audit recommendation. To ensure appropriate supervisory review of the approval of contract invoices, RMRS will establish a process that includes:

- Sampling of invoices of the most “complex” RMRS contracts.
- Verification of training of [...], annually and as applicable. The acquisition community as a whole for the FS is placing a strong emphasis on the [...] duties and responsibilities by ensuring each [...] has had the required training for their [...] certification.
- Incorporation of the RMRS “Internal Process Plan” (internal station-wide AQM program review) that will assist with the invoice review process.

Estimated Completion Date for Recommendation 3: September 30, 2011

OIG Recommendation 4: Ensure future contracts provide more detailed information as to what is expected from the contractor on monthly invoices.

FS Response to Recommendation 4: The FS concurs with this audit recommendation. In response to the audit recommendation, the following actions have been or will be taken:

- RMRS issued letters to all vendors with current contracts explaining exactly what the invoice needs to convey, prior to being approved for payment, i.e., number of hours worked and what percent of deliverables have been met.
- NFC issued a letter to all R/S/As December 12, 2007, detailing the information required on invoices and will begin issuing the NFC letter and/or requirements with all new RMRS complex contract awards.

Estimated Completion Date for Recommendation 4: September 30, 2011

OIG Recommendation 5: Require the contractor to submit supporting documentation for all invoices submitted under this fire model contract. Review the documentation to ensure it provides detailed information of work performed and that it meets the contract's clauses.

FS Response to Recommendation 5: The FS concurs with this audit recommendation. In response to the audit recommendation, the following actions will be taken by RMRS:

- Conduct a meeting with the contractor at the appropriate time to discuss the OIG audit findings and to request supporting documentation that includes detailed information of work performed. RMRS staff has preparation for that meeting.
- [...] review and analyze the Statement of Work’s submitted with the task orders and compare against the invoices to ensure the work performed meets the contract’s clauses.
- [...] to report the results of the review to the RMRS Acquisition Manager by the 20th of each month until complete.

Estimated Completion Date for Recommendation 5: September 30, 2011

OIG Recommendation 6: Recover questioned cost of \$724,000 unless the contractor provides detailed evidence of work performed and billed. Recover any other questionable or unsupported costs based on review performed in recommendation 5.

FS Response to Recommendation 6: The FS concurs with this audit recommendation. In response to the audit recommendation, the following actions have or will be taken by RMRS:

- The review of the OIG spreadsheet regarding the contractor invoices has been completed.
- Plan to conduct a meeting with the contractor to request and obtain supporting documentation for the invoices in question. Part of that planning depends on completion of verification of the magnitude of the problem. See number 5 above.
- Depending on contractor's cooperation to provide the proper records, the Agency will assess its options for recovery.

Estimated Completion Date for Recommendation 6: December 31, 2011