



U.S. Department of Energy
Office of Audit Services

Audit Report

The McNeil Biomass Project

DOE/IG-0630

December 2003




Department of Energy

Washington, DC 20585

December 11, 2003

MEMORANDUM FOR THE SECRETARY

FROM:


Gregory H. Friedman
Inspector General

SUBJECT:

INFORMATION: Audit Report on "The McNeil Biomass Project"

BACKGROUND

The Department of Energy invests about \$80 million annually in biomass programs, focusing on the use of plant-derived organic matter as a renewable energy resource. Consistent with the President's national energy policy, the goal of the Department's effort is to make biomass energy a cost-competitive alternative to traditional energy sources.

In 1994, at the direction of Congress, the Department began providing financial assistance for the McNeil Biomass Project in Burlington, Vermont. The recipient of the award was Future Energy Resources Corporation, an entity formed specifically for the purpose of commercializing gasification technologies. The Project was initially successful and, in 1998, the Department, the recipient, and other contributors shared an R&D 100 award for development of the gasification process. Through Fiscal Year 2001, the Department invested over \$34 million in this project. For FY 2002, Congress directed that the Department provide an additional \$3 million in financial support.

In a previous audit on *Financial Assistance for Biomass-to-Ethanol Projects* (DOE/IG-0513, July 2001), the Office of Inspector General found that the Department had not provided adequate monitoring and direction to certain biomass projects. Based on our previous work and on specific concerns raised about the Project, we initiated this audit to determine whether the Department adequately managed its financial assistance to the McNeil Biomass Project.

RESULTS OF AUDIT

We found that since our prior audit, the Department had made policy changes designed to improve the management of energy-related financial assistance awards. However, despite these changes, the Department's oversight of the McNeil Biomass Project was inadequate. Specifically, in FY 2002, the Department continued to fund McNeil even though there was little or no progress in meeting annual programmatic performance objectives. While Federal program officials took certain actions to monitor the Project



and limit reimbursements, the Department did not fully implement previously announced project control enhancements designed to prevent or detect recipient performance problems. In particular, program managers did not, in our judgment, devote adequate attention to monitoring progress against Project milestones. Thus, the Department, despite a significant financial commitment, could not be sure that McNeil was meeting its stated goals.

As a result, Future Energy Resources Corporation expended about \$2 million without satisfying the majority of McNeil's FY 2002 objectives. The failure to complete these objectives may well delay the Department's effort to develop environmentally sound alternative energy sources.

During the course of the audit, McNeil declared bankruptcy, and Headquarters officials became aware of the awardee's performance problems. At this point, the Department terminated the financial assistance award. While this was a reasonable step under the circumstances, we concluded that the investment in the Project by U.S. taxpayers would have been better protected had the Department exercised a proactive, robust program to prevent or detect problems in grant recipient performance. Consequently, we made several recommendations to achieve this goal, specifically regarding future financial assistance awards.

MANAGEMENT REACTION

The Office of Energy Efficiency and Renewable Energy agreed with the conclusions reached and the appropriateness of our recommendations. Management's comments have been included in their entirety in Appendix 4.

Attachment

cc: Deputy Secretary
Under Secretary for Energy, Science and Environment
Assistant Secretary, Energy Efficiency and Renewable Energy
Manager, Golden Field Office

THE MCNEIL BIOMASS PROJECT

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MANAGEMENT AND OVERSIGHT OF THE MCNEIL BIOMASS PROJECT

Background

In 1994, Congress initially directed funding for the McNeil Biomass Project¹ to help it achieve its goal of demonstrating commercial-scale biomass gasification. The project included designing and building a gasification plant at the Burlington Electric Company's McNeil Station in Burlington, Vermont. The Department of Energy's (Department) cooperative agreement committed it to providing matching funds and required the recipient to report progress toward goals and provide support for project expenditures when seeking reimbursement. The project was initially successful and, in 1998, the Department, the recipient, and other contributors shared an R&D 100 award for development of the gasification process. The process was completed by the end of Fiscal Year (FY) 2001, and the recipient attempted to commercialize the technology as it existed at that time. At the direction of Congress, the Department provided \$3 million in FY 2002 to aid the recipient in accomplishing several objectives related to improving the gasification process. While the project continued to operate and expend accumulated funds, the Department did not begin funding FY 2002 activities until late April 2002.

Based on our previous audit of biomass projects, the Office of Energy Efficiency and Renewable Energy (Energy Efficiency) strengthened controls and required program officials to more closely monitor recipients of financial assistance awards. Program managers and contracting officials were required to verify the quality and timeliness of deliverables, monitor progress against milestones, and ensure that projects achieved their stated goals.

Financial Assistance and Program Objectives

The Department continued to provide funds to the McNeil Biomass Project even though there was little or no progress toward meeting FY 2002 objectives. For example, even though progress reports frequently indicated that "no additional milestones were achieved" or "no activities were conducted" during the reporting period, program officials continued to authorize reimbursements for expenditures. Payments continued despite the fact that the McNeil Gasification Plant,

¹ This project was also known as the McNeil Gasification Plant, the McNeil Generating Station, the Vermont Gasification Project, the McNeil Biomass Plant, and the Burlington Plant.

critical to the performance of several objectives, was never restarted after being winterized in October of 2001. Similarly, funding was not interrupted even after the recipient notified the Department in May 2002 that it would not be possible to complete scheduled tests because of various delays. As detailed in Appendix 2, three of the four 2002 tasks remained incomplete at the time of our review. Despite these clear indications of lack of progress, the Department continued to provide reimbursements up until one day before the financial assistance recipient filed for protection under Chapter 11 of the bankruptcy code.

Establishing Goals and Monitoring Progress

Despite previous efforts to improve controls over financial assistance awards, program officials did not devote adequate attention to establishing project objectives and did not closely monitor the McNeil Project. Specifically, they did not ensure that objectives and milestones were appropriate given previous accomplishments, substantial funding delays, and recipient circumstances. Program officials also did not ensure that the recipient made adequate progress toward achieving project goals.

Project Objectives

While the Department approved McNeil's FY 2002 Statement of Work, it did not ensure that objectives and milestones were appropriate. For example, even though the tasks were completed before the fiscal year began, requirements to test two major biomass feedstocks were included as milestones. Contracting officials also approved milestones commencing at the beginning of the fiscal year even though project funding was not made available until late April 2002. Golden officials did not negotiate modifications to the statement of work after they learned it was unlikely that the McNeil Gasification Plant, closed and winterized in October of 2001, would be restarted. No action was taken to modify milestones or alter funding plans even after the recipient made it clear in May 2002 that it was not possible to complete scheduled tests because of various delays.

Monitoring Progress

While Golden took action to limit reimbursements for McNeil expenditures, it did not ensure that adequate progress was being made toward achieving FY 2002 goals. For example, even though recipient

progress reports usually consisted of a single sheet of paper and frequently reflected no accomplishments during the reporting period, program managers approved payments for over \$540,000 without amplifying data. Further, program management officials told us that they relied on a former contractor employee to review requests for reimbursement and that the project manager could not readily explain the documentation provided to support payments. Our examination of approvals for reimbursement disclosed one occasion in October 2002 when program officials expressed concern over a single invoice. The program manager authorized the reimbursement without requesting or receiving clarifying information.

Officials from Golden also did not specifically recommend, to Department Headquarters, that action be taken based on the lack of progress made by the recipient in FY 2002. Similarly, no such recommendation was made when Golden learned that the recipient was unlikely to meet performance expectations. Golden officials took no action because they believed that the project was successful, had previously won a research award, and that commercialization was near. They also indicated that they did not operate in a vacuum, frequently spoke with Energy Efficiency Headquarters officials, and assumed that these officials knew the status of the project. Other Energy Efficiency officials at Headquarters, however, told us that the Assistant Secretary was never informed of problems with the project. These officials also told us that, had they known of the lack of progress achieved on the project, funding would likely have been terminated.

Project Research Benefits

Had the Department delayed or terminated funding for the McNeil Project, the funds expended could have been put to better use. For example, if the Department had conserved funds pending the recipient's ability to restart its test facility and complete remaining testing, those funds would still be available for the advancement of research. Instead, the Department had little to no assurance that the \$2 million spent on the McNeil Biomass Project in FY 2002 would benefit the Department or the scientific community at large.

Path Forward

To their credit, Headquarters officials moved to terminate the financial assistance award once they were fully informed of performance problems and the bankruptcy. While this action is positive and should

serve to protect the Government's interests, we believe that additional actions are necessary. The following recommendations are designed to strengthen the management of future financial assistance awards.

RECOMMENDATIONS

To improve the oversight of Congressionally directed projects, we recommend that the Assistant Secretary for Energy Efficiency and Renewable Energy strengthen controls over monitoring of such projects by:

1. Ensuring that project objectives and Statements of Work are appropriate given funding availability and recipient circumstances;
2. Ensuring managers strictly follow existing policies pertaining to managing financial assistance awards, to include communicating knowledge of high-risk recipients and their potential to achieve project objectives within the Department and, if warranted, to Congressional appropriators;
3. Documenting all instances of monitoring actions in official project files; specifically, evaluation of progress reports received from the recipient, including the status of completion toward objectives, tasks, and milestones established in the Statement of Work; and
4. Withholding project funding upon indication of unacceptable project performance.

MANAGEMENT REACTION

The Assistant Secretary for Energy Efficiency and Renewable Energy agreed with the conclusions reached and the appropriateness of our recommendations. Management's comments have been included in their entirety in Appendix 4.

Appendix 1

OBJECTIVE

To determine whether the Department adequately managed its financial assistance to the McNeil Biomass Project.

SCOPE

The audit was performed from January through July 2003 at Department Headquarters in Washington, DC, and Germantown, MD. A site visit was made to the Golden Field Office in Golden, CO, and to the National Renewable Energy Laboratory in Golden, CO.

The scope of our audit was limited to the McNeil Biomass Project managed by the Office of Energy Efficiency and Renewable Energy.

METHODOLOGY

To accomplish the audit objective we:

- Reviewed prior Office of Inspector General reports to identify concerns associated with Congressionally directed projects managed by the Department;
- Reviewed prior audits by organizations outside of the Department to identify concerns pertaining to the Department's management of Congressionally directed projects;
- Obtained and reviewed criteria related to Congressionally directed projects;
- Reviewed the Congressional language related to the McNeil Biomass Project for the FYs 2000 through 2002;
- Held discussions with officials at Headquarters in the Office of Budget to gain an understanding of the process surrounding Congressionally directed funds;
- Held discussions with officials in the Office of Energy Efficiency and Renewable Energy to determine their processes for managing Congressionally directed, as well as non-Congressionally directed, projects; and,

Appendix 1 (continued)

- Compared the FY 2002 Statement of Work for the McNeil Biomass Project with the work actually completed through the date of our review.

We conducted the audit in accordance with generally accepted Government auditing standards for performance audits, and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. 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. Because of the scope of our audit, we did not use, nor validate, computer-processed data. We assessed the Department's compliance with the Government Performance and Results Act of 1993. However, the Department's Performance and Accountability Report for Fiscal Year 2002 did not include specific performance data pertaining to congressionally directed projects nor, more specifically, to the McNeil Biomass Project. Because the scope of our review was limited, we did not specifically evaluate whether such measures were adequately administered by other Departmental organizations.

We held an exit conference with the Office of Energy Efficiency and Renewable Energy on November 25, 2003.

Appendix 2

STATUS OF FY 2002 TASKS

Listed below are tasks set forth in the FY 2002 Statement of Work, which were to be completed during the fiscal year. However, the McNeil plant was placed in stand-by in October 2001 and has not operated since.

- **Evaluate Alternate Feedstocks:** The objective was to test two alternate feedstocks, willow and jarah wood, and to identify and evaluate other feedstocks as the program progressed. Despite completion of testing for both willow and jarah wood during FY 2001, these feedstocks were included in the FY 2002 Statement of Work. To our knowledge, tests of feedstocks other than jarah and willow were never completed. *Status: Not Complete*
- **Evaluate Gas Conditioning System Performance:** The objective was split into three milestones, each dealing with a different type of catalyst testing. The evaluation of the data generated by testing one of the catalysts was completed during FY 2001. To our knowledge, testing pertaining to another catalyst was not completed while progress toward the remaining catalyst was not addressed in progress reports. *Status: Not Complete*
- **Evaluate Biomass Drying:** The objective stated that a cutting-edge study would be performed to identify available and appropriate drying systems that could be implemented. Furthermore, the study would provide input to the selection of a dryer to be installed in the plant during a future program phase. Progress toward this objective was not addressed in the FY 2002 progress reports. However, after our review, the Golden Field Office provided us with a May 2003 progress report indicating that this study had been completed. Golden subsequently provided us with a copy of the report on drying systems. *Status: Complete*
- **Install Interconnection System for Power Generation:** The task was a continuation of activities initiated in FY 2001 that will expand the interactions with other partners who construct power generation systems. The objective was the identification of requirements and the design of an interconnection. Up to the declaration of bankruptcy, project reports indicated that discussions with partners continued. *Status: Not Complete*

PRIOR REPORTS

- *Financial Assistance for Biomass-to-Ethanol Projects* (DOE/IG-0513, July 2001). DOE was required to award, through congressional direction, financial assistance to two firms whose goal was to construct a full-scale biomass production facility by the year 2000. The audit revealed that DOE had not met its programmatic goal of having a full-scale commercial biomass production facility built by 2000. In fact, construction of the two facilities had not even started as of the completion of this audit. As of the date of the audit, DOE had spent nearly \$15 million on these projects and there was no biomass facility on the horizon. Management asserted that, because of the appropriations action, its latitude in managing these projects was severely limited.
- *Budget Issues: Earmarking in the Federal Government* (GAO/AIMD-95-216FS, August 1995). This fact sheet identified the extent to which federal receipts had been earmarked in fiscal year (FY) 1994. Receipts were considered to be earmarked when the funds were designated for particular uses by authorizing legislation or permanent law. GAO found extensive earmarking in numerous accounts and showed that, in FY 1994, 47 percent of total receipts from the public were earmarked in the federal government.
- *Audit of Costs Claimed for Reimbursement Under Florida International University's Subcontract No. OSP-90-10-668-020 with Clark Atlanta University Prime Contractor for Department of Energy Cooperative Agreement No-DE-FCO4-90AL66158* (HHS/IG A-04-01-00504, March 2002). This was a Department of Health and Human Services (HHS) audit of the costs claimed through September 30, 2001, for reimbursement under the Florida International University (FIU) subcontract with Clark Atlanta University (CAU). Of the \$1,516,661 in costs claimed for subcontract performance, HHS recommended \$126,881 for acceptance, \$770,518 for disallowance, and \$619,262 for DOE adjudication.
- *Audit of Costs Claimed for Reimbursement by Clark Atlanta University on Selected Task Orders Under Subcontract N2424320-30-T007 From the Fluor Daniel Restoration Management Corporation Funded Under Department of Energy Prime Contract DE-AC24-920R21972* (HHS/IG A-04-02-08504, August 2002). This was an HHS audit of costs claimed from May 1993 through June 1998 by CAU under subcontract with Fluor Daniel Restoration Management Corporation (FERMCO). Of the \$1,448,491 of claimed reimbursements included in the scope of the HHS audit, \$158,506 was reasonable, allowable, and allocable. They recommended \$143,015 for financial adjustment and \$1,146,971 for DOE adjudication.

Appendix 3 (continued)

- *Audit of Costs Claimed for Reimbursement by Florida International University on Selected Task Orders Funded Under Department of Energy Prime Contract DE-AC24-92OR21972 (HHS/IG A-04-02-08505, August 2002).* This was an HHS audit of costs claimed from March 1998 through March 2002 by FIU on a basic ordering agreement from Flour Fernald, Inc. to fund the functioning of the Hemispheric Center for Environmental Technology. Of the \$729,409 claimed for reimbursement by the University for the task orders audited, \$75,292 was allowable in accordance with applicable federal regulations and terms of the agreement. HHS recommended \$84,022 for disallowance and \$570,095 for DOE adjudication.

MANAGEMENT COMMENTS



Department of Energy
Washington, DC 20585

NOV 14 2003

MEMORANDUM FOR

FREDERICK D. DOGGETT
ASSISTANT INSPECTOR GENERAL
FOR AUDIT SERVICES
OFFICE OF THE INSPECTOR GENERAL

FROM:

DAVID K. GARMAN 
ASSISTANT SECRETARY
ENERGY EFFICIENCY AND RENEWABLE ENERGY

SUBJECT:

ACTION: Submission of Headquarters Response to the
Draft Audit Report on "The McNeil Biomass Project"

ISSUE:

On August 7, 2003, Frederick D. Doggett, Assistant
Inspector General for Audit Services, sent me the Office of
Inspector General's draft audit report entitled "The McNeil
Biomass Project."

Headquarters has reviewed the document and concurs with
the Office of Inspector General's four recommendations
listed on page three of the draft audit report: "that the
Assistant Secretary for Energy Efficiency and Renewable
Energy strengthens controls over monitoring of
[Congressionally directed] projects by: (1) Ensuring that
project objectives and Statements of Work are appropriate
given funding availability and recipient circumstances; (2)
Ensuring managers strictly follow existing policies
pertaining to managing financial assistance awards, to
include communicating knowledge of high-risk recipients
and their potential to achieve project objectives within the
Department and, if warranted, to Congressional
appropriators; (3) Documenting all instances of monitoring
actions in official project files; specifically, evaluation of
progress reports received from the recipient, including the
status of completion toward objectives, tasks, and
milestones established in the Statement of Work; and (4)
Withholding project funding upon indication of
unacceptable project performance."

The Headquarters response to the draft audit report is
attached.

Attachment

Appendix 4 (continued)

Headquarters Response to the Office of Inspector General's Draft Audit Report on "The McNeil Biomass Project"

Thank you for the opportunity to review the Office of Inspector General's (OIG) draft audit report on "The McNeil Biomass Project" (the "draft report"). The four recommendations listed on page three of the draft report are directed at the oversight of Congressionally directed projects within the Office of Energy Efficiency and Renewable Energy (EERE). We concur with those four recommendations ("that the Assistant Secretary for Energy Efficiency and Renewable Energy strengthens controls over monitoring of [Congressionally directed] projects by: (1) Ensuring that project objectives and Statements of Work are appropriate given funding availability and recipient circumstances; (2) Ensuring managers strictly follow existing policies pertaining to managing financial assistance awards, to include communicating knowledge of high-risk recipients and their potential to achieve project objectives within the Department and, if warranted, to Congressional appropriators; (3) Documenting all instances of monitoring actions in official project files; specifically, evaluation of progress reports received from the recipient, including the status of completion toward objectives, tasks, and milestones established in the Statement of Work; and (4) Withholding project funding upon indication of unacceptable project performance.") These recommendations are consistent with current EERE policy and practice, as set out in the Assistant Secretary's January 7, 2002 guidance memo, and with the appropriate fiscal oversight and project management.

Concurrence: ME-3

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