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NUCLEAR WASTE

Overhead Costs at the Department of Energy's Savannah River Site





United States
General Accounting Office
Washington, D.C. 20548

**Resources, Community, and
Economic Development Division**

B-254637

October 25, 1993

The Honorable Hazel R. O'Leary
The Secretary of Energy

Dear Madam Secretary:

The broad issue of the Department of Energy's (DOE) contract management policies and practices, including contractors' overhead costs,¹ continues to be a topic of concern to both DOE and the Congress. For example, at a May 26, 1993, hearing before the Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, you testified that "DOE is not adequately in control of its contractors and as a result the contractors are not sufficiently accountable to the Department." As a result of this testimony, you established a team to evaluate the contracting problems and make recommendations to you by December 31, 1993. Among the many items detailed in your testimony was a three-step program to gain greater short-term control over indirect costs. You also stated that a permanent inspection team would be established to deal with the issue, if the short-term review indicates widespread problems with indirect costs.

Prior to your May 1993 testimony, we had under way a congressionally requested assignment examining overhead costs of the Westinghouse Savannah River Company (WSRC)—the major contractor operating and managing DOE's facilities at the Savannah River Site (SRS) in South Carolina. As a result of our briefings and discussions with the requester's staff after your May testimony, we agreed that a fact sheet addressed to you would complete our work at SRS. We believe that the information provided in this fact sheet can be helpful in your examination of contractors' overhead costs.

This fact sheet provides information on overhead costs (1) budgeted under the WSRC contract for fiscal year 1993 and the allocation of these costs to the various WSRC organizational units at SRS and (2) budgeted and incurred by SRS' Environmental Restoration Program, including overhead costs distributed to selected environmental restoration projects.

In summary, we found that:

¹Overhead costs, also commonly called "indirect" costs, refer to those costs that cannot be directly identified with a particular project or activity. Direct costs, on the other hand, are costs that can be identified with a specific project or task.

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- DOE budgeted about \$2.1 billion in fiscal year 1993 for WSRC to operate SRS. Of this total, about 40 percent, or about \$822 million, is for various overhead costs. For example, in fiscal year 1993, the budget for general and administrative (G&A) and site support overhead is \$281.7 million; the divisions' overhead budget is \$86.8 million; and the departments' overhead budget is \$454 million.

For the operating program, WSRC distributes the G&A and site support overhead costs to the divisions on the basis of the proportion of employees assigned to the divisions compared to the number of WSRC employees at SRS. Likewise, WSRC distributes division overhead costs to each department within a division on the basis of the proportion of employees assigned to the department compared to the number of employees in the division. Department overhead costs are distributed on the basis of the number of direct employees in that department. Overhead costs are included in the hourly labor rate of a direct employee that is paid by the government.

The capital program is composed of capital equipment and construction activities. Capital program overhead amounts do not include all indirect costs that are a part of the operating program. DOE anticipates changing the method of developing capital program overhead costs by the end of fiscal year 1995.

- The Environmental Restoration Department's projected overhead costs for all three pools is about \$19 million, or about 33 percent of this department's \$58 million fiscal year 1993 budget. Of the remaining \$39 million in direct costs, subcontracting costs total \$21 million. Subcontracting costs are direct costs for WSRC because the subcontracts are for specific environmental restoration activities, such as site characterization analysis. The subcontractors' costs consist of both direct and overhead costs. For example, overhead costs for the five principal environmental restoration subcontractors at SRS averaged about 51 percent of the total subcontracting costs during the most recent contract period. However, these are subcontractors' overhead costs, not WSRC's overhead costs.
- Overhead costs assigned to individual projects vary. Two factors influence the amount of overhead assigned to a project: (1) the amount of costs recorded in the pools and (2) the number of employees, especially the number of direct employees, assigned to the individual projects. Other factors that can affect overhead costs on individual projects are the type and degree of contamination, the amount of direct materials used, and the

use of subcontractors, laboratories, and other WSRC organizational units. For example, one project to clean up groundwater contamination had overhead costs of about 25 percent, while another project had overhead costs of 43 percent.

Section 1 provides further information on SRS' overhead costs. Section 2 presents overhead costs for six individual environmental restoration projects.

To develop information on WSRC's overhead costs at SRS and the allocation of these costs, we reviewed WSRC's fiscal year 1993 budget and the Consolidated Labor System, which accounts for direct and overhead hours. We also developed overhead cost information on the Environmental Restoration Department, because its overall costs are expected to increase yearly through fiscal year 1998. In addition, we reviewed DOE's and WSRC's files and held discussions with DOE and WSRC managers and employees. We identified overhead costs charged to selected environmental restoration activities, such as fiscal year 1992 projects costing more than \$3 million. We obtained results of other audit and evaluation work from the DOE Inspector General, the U.S. Army Corps of Engineers, the Office of Management and Budget, and other GAO work.

We performed most of the work at SRS in Aiken, South Carolina. However, we visited various offices in Washington, D.C., and Germantown, Maryland.

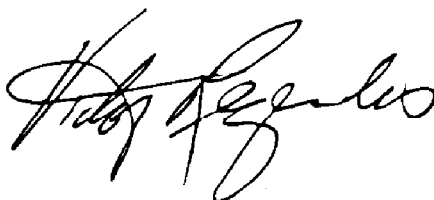
We discussed the information presented in this fact sheet with DOE officials at SRS, including the Chief Financial Officer and the Director of the Financial Management Review and Evaluation Division. We incorporated their suggestions where appropriate. In general, these officials agreed with the facts presented, but they believed that certain observations should be made to provide an important context for the fact sheet. In particular, they believed that, because there is a wide range of recognized differences in accounting practices and definitions of indirect costs among DOE and outside organizations, it would not be appropriate to draw conclusions about the propriety of WSRC's overhead costs shown in the fact sheet. They also stated that significant changes in overhead costs and their distribution systems will occur in fiscal years 1994 and 1995 because of mission changes, workforce restructuring plans, and new DOE policies related to overhead distributions to capital programs. These

changes, in their opinion, will make extrapolation of data in this fact sheet to future overhead costs extremely difficult.

We conducted our review from October 1992 to August 1993 according to generally accepted government auditing standards.

If you or your staff have any questions about this fact sheet, please call me at (202) 512-3841. Major contributors to this fact sheet are listed in appendix I.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Victor S. Rezendes". The signature is fluid and cursive, with the first name being the most prominent.

Victor S. Rezendes
Director, Energy and
Science Issues

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Abbreviations

ADS	Activity Data Sheet
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DOE	Department of Energy
GAO	General Accounting Office
G&A	general and administrative
M&O	management and operating
RCRA	Resource Conservation and Recovery Act
SRS	Savannah River Site
WSRC	Westinghouse Savannah River Company

Westinghouse Savannah River Company's Overhead Costs at DOE's Savannah River Site

Background

The Department of Energy's (DOE) Savannah River Site (SRS) is a government-owned, contractor-operated nuclear weapons production facility managed and operated by the Westinghouse Savannah River Company (WSRC). As DOE's management and operating (M&O) contractor, WSRC has been operating SRS since 1989.

SRS has produced nuclear weapons materials for about 40 years. Since it is a large site—about 300 square miles—with numerous nuclear facilities, special equipment must be purchased and maintained, and a large staff is required to operate the facilities and provide a proper health and safety environment.

Overhead costs, also commonly called “indirect” costs, refer to those costs that cannot be directly identified with a particular project or activity. The system of overhead cost pools and allocations is designed to reflect a causal-beneficial relationship between projects and overhead allocated to them.¹ Examples of overhead costs include rent, utilities, taxes, and administrative costs. Direct costs, on the other hand, are costs that can be identified with a specific project or task, such as materials, labor, and other items.

Basically, WSRC classifies SRS's overhead costs into three pools: (1) site support and general and administrative (G&A), (2) divisional, and (3) departmental. Site support overhead includes the costs of organizations in support of the SRS site; support for construction (such as drug screening and security processing for subcontractors); and environmental safety, health, and quality assurance support, which includes the fire department, medical clinic, security badges, and safety training. G&A overhead includes the costs of site-level administrative organizations that support all WSRC divisions and cannot be specifically identified with a project or task. For example, Financial Management and Information Systems, Administrative Services, and the Office of the WSRC President are part of the G&A costs.

Division overhead consists of costs that provide an indirect benefit to one or more final-cost objectives. Division overhead includes the costs of division-level personnel, which are administrative in nature and support all departments within the division. For example, a division's vice president and staff, the division's financial organization, division operational planning, and the program management organization are division overhead costs.

¹Cost Accounting Standards, 48 CFR 9904.418-50(e)(5).

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Department overhead consists of costs that provide an indirect benefit to one or more final-cost objectives that are identifiable to a particular group below the division level. These costs are allocated to final-cost objectives on the basis of direct labor. Department overhead includes costs that support the department. For example, taxes, benefits, holidays, vacation, and sick time for employees; administrative and secretarial support; automated data processing equipment; and office supplies make up department overhead costs.

Savannah River Site's Overhead Costs

SRS's overhead costs represent about \$822 million, or about 40 percent of WSRC's total \$2.1 billion fiscal year 1993 budget.² The overhead costs are distributed to direct employees and are reflected in their hourly labor rates. Overhead costs vary within SRS's operating and capital programs, since the number of employees and the amount of costs in the pools differ. The amounts of direct materials used and direct subcontracts also affect overhead. In October 1992, WSRC began using a new, detailed activity-based accounting system to better identify costs to specific projects.

Overhead Costs Represent About 40 Percent of Total Contract Costs

Under its contract, DOE budgeted about \$2.1 billion (\$1.6 billion operating and \$.5 billion capital) in fiscal year 1993 for WSRC to operate the site. This amount does not include the costs of two additional, relatively small dollar-value M&O contractors—Wackenhut Services Incorporated for security services (about \$45 million yearly) and the University of Georgia Savannah River Ecology Laboratory (about \$14 million yearly). WSRC's overhead costs are about 40 percent, or \$822 million of the total WSRC contract.

Overhead costs for the operating programs range from about 26 percent of the total cost for the Safeguards Security and Emergency Preparedness Division to about 56 percent of the total cost for the Nuclear Materials Processing Division within the operating program. The major reasons for these differences are the number of employees and the amount of overhead costs in the pools. The functions performed and the use of subcontracts, which are direct costs, affect the overhead. For example, the Nuclear Materials Processing Division requires greater overhead to support its function of processing nuclear materials than the smaller Safeguards Security and Emergency Preparedness Division, a new division

²This is a cost-reimbursable-plus-award-fee contract under which DOE reimburses the M&O contractor for all allowable costs incurred in the performance of the contract work. WSRC's overhead calculations made are for management information only and are not used in determining reimbursement under the M&O contract.

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with few overhead costs assigned to it now. The Nuclear Materials Processing Division uses a small total-dollar amount of subcontracts compared to other divisions. In addition, the capital program has a lower overhead rate (20.75 percent), because not all types of indirect costs accrue to capital projects. DOE anticipates changing the method of developing capital program overhead costs by the end of fiscal year 1995. Table 1.1 illustrates the extent of direct and overhead costs budgeted for fiscal year 1993.

Table 1.1: Direct and Overhead Costs Budgeted at WSRC for Fiscal Year 1993

Dollars in thousands

Type of activity	Direct costs	Total overhead costs	Total costs	Overhead costs as a percentage of total costs
Operating program				
Safeguards Security and Emergency Preparedness	\$ 29,064	\$ 10,105	\$ 39,169	25.80
Engineering and Projects Division	124,523	98,604	223,127	44.19
Savannah River Technology Center	92,368	100,012	192,380	51.99
New Production Reactor	3,087	2,175	5,262	41.33
Environmental Safety, Health, and Quality Assurance	89,169	83,819	172,988	48.45
Nuclear Materials Processing Division	134,005	167,839	301,844	55.60
Reactor Restart Division	113,464	74,036	187,500	39.49
Site Services Division ^a	137,565	53,891	191,456	28.15
Waste Management and Environmental Restoration	155,755	136,315	292,070	46.67
Administrative Services Division and other support ^a	2,292	2,561	4,853	52.77
Capital program^b	355,423	93,054	448,477	20.75
Total	\$1,236,715	\$822,411	\$2,059,126	39.94

^aThe "Site Services Division" and "Administrative Service Division and other support" categories appear to be overhead functions but actually represent a mix of direct and indirect charges. For example, the Site Services Division supplies power, steam, lights, and water that WSRC defines as direct costs to specific projects. The Administrative Services Division's costs include other overhead organizations, as well as inventory changes and post-retirement benefits. Some costs in this category are considered direct.

^bThe WSRC capital program is comprised of capital equipment items and construction activities. Capital equipment items represent personal property assets that have an acquisition value of \$5,000 or more and a service life of 2 or more years. Construction activities include general plant projects (miscellaneous new construction costing less than \$1.2 million) and line item projects that cost more than \$1.2 million and that the Congress individually reviews as a line item in the budget.

Source: GAO's presentation of WSRC's budget data.

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**Key Elements of Overhead
Costs**

The G&A and site overhead costs total about \$281.7 million—\$191.2 million for G&A and \$90.5 million for site support. When divisions' and departments' overhead costs are included, total overhead rises to \$822.4 million, or about 40 percent of the \$2.1 billion contract.

G&A and site support overhead costs are distributed to the various WSRC organizational units on the basis of the proportion of the number of employees assigned to such units compared to the number of WSRC employees. Likewise, a division's overhead costs are distributed to the departments within the division on the basis of the proportion of employees assigned to each department compared to the number of employees in the division. The department's overhead costs are distributed to the direct employees in that department. Therefore, the direct employees assume all G&A, site, and division overhead costs. All overhead costs are included in the hourly labor rate of a direct employee.

In October 1992, WSRC began using a detailed accounting system containing 156 cost centers. Previous accounting systems did not permit cost details to be broken down at the individual project level. The new system provides cost breakdowns to the lowest levels of the organization, using 40,000 activity codes. The activity codes, which are used when charging costs to specific projects, provide greater insight into overhead costs.

Table 1.2 illustrates the total overhead costs for the organizational units within WSRC.

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Table 1.2: WSRC's G&A Site Support, Division, and Department Overhead Costs Budgeted for Fiscal Year 1993

Dollars in thousands

Type of activity	G&A and site overhead costs	Division overhead costs	Department overhead costs	Total overhead costs
Operating program				
Safeguards Security and Emergency Preparedness	\$ 7,365	\$ 519	\$ 2,221	\$ 10,105
Engineering and Projects Division	23,820	5,559	69,225	98,604
Savannah River Technology Center	27,691	35,152	37,169	100,012
New Production Reactor	675	709	791	2,175
Environmental Safety, Health, and Quality Assurance	34,736	766	48,317	83,819
Nuclear Materials Processing Division	64,113	27,528	76,198	167,839
Reactor Restart Division	24,673	3,204	46,159	74,036
Site Services Division ^a	32,196	2,108	19,587	53,891
Waste Management and Environmental Restoration	47,360	5,590	83,365	136,315
Administrative Services Division and other support ^a	1,834	0 ^b	727	2,561
Capital program^c				
	17,211	5,637	70,206	93,054
Total	\$281,674	\$86,772	\$453,965	\$822,411

^aThe "Site Services Division" and "Administrative Service Division and other support" categories appear to be overhead functions but actually represent a mix of direct and indirect charges. For example, the Site Services Division supplies power, steam, lights, and water that WSRC defines as direct costs to specific projects. The Administrative Services Division's costs include other overhead organizations, as well as inventory changes and post-retirement benefits.

^bDivision overhead was not charged to overhead organizations because all employees were indirect and all the overhead costs were charged to G&A and site overhead.

^cThe WSRC capital program is comprised of capital equipment items and construction activities. Capital equipment items represent personal property assets that have an acquisition value of \$5,000 or more and a service life of 2 or more years. Construction activities include general plant projects (miscellaneous new construction costing less than \$1.2 million) and line item projects that cost more than \$1.2 million and that the Congress individually reviews as a line item in the budget.

Source: GAO's presentation of WSRC's budget data.

**Environmental
Restoration
Department's
Overhead Costs**

The Environmental Restoration Department is a small part of the Waste Management and Environmental Restoration Division, although the department's budget is expected to increase significantly in the future. The department's costs consist of labor, subcontracts, material, and the costs of other WSRC organizational units, such as the Savannah River Technology Center; Site Services; Environmental Safety, Health, and Quality Assurance; and Engineering and Projects. Each of these units charges the Environmental Restoration Department for services. These charges

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include WSRC's overhead costs. Every direct employee is allocated a portion of G&A and site, division, and department overhead costs.

Key Elements of
Environmental Restoration
Department's Overhead
Costs

The Environmental Restoration Department's budget for both WSRC and DOE is expected to increase yearly—from about \$66 million³ in fiscal year 1993 to a fiscal year 1998 estimate of about \$106 million, according to the Environmental Restoration and Waste Management Five Year Plan Fiscal Years 1994-1998, dated January 1993. However, according to DOE's Office of Financial Management for Environmental Restoration and Waste Management, the actual budget will be reduced to about \$74 million in 1998 due to DOE's overall budget constraints. Currently, the Waste Management Department receives most of the Environmental Restoration and Waste Management Division's funds—about \$576 million of the \$644 million fiscal year 1993 budget.

As table 1.3 illustrates, most Environmental Restoration Department cost is made up of either subcontracts or other WSRC organizational units, such as the Savannah River Technology Center; Environmental Safety, Health, and Quality Assurance; Site Services; and the Engineering and Projects divisions, which carry their own overhead costs. These other WSRC organizations charge the Environmental Restoration Department for their specific activities, such as site characterization analysis or the services of a health physicist. The overhead costs associated with these activities are also charged to the Environmental Restoration Department. The department's overhead is about \$9.7 million of the \$15 million in its labor pool, or 65 percent. However, the department's total overhead rises from \$9.7 million to about \$19 million—about 33 percent of the total \$58 million WSRC budget—when overhead costs from the other WSRC units are added.

³According to the Environmental Restoration and Waste Management Five Year Plan, WSRC's and DOE's environmental restoration departments' budgets will total \$66 million—\$58 million for WSRC and \$8 million for DOE.

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Table 1.3: Environmental Restoration Department Costs Budgeted for Fiscal Year 1993

Cost area	Direct costs	Overhead costs	Total costs	Overhead as a percentage of total costs
Labor pool	\$ 5,288,500	\$ 9,677,800 ^a	\$14,966,300	65 ^b
Subcontracts	21,027,300		21,027,300	0
Direct materials	212,400		212,400	0
Savannah River Technology Center	2,705,500	2,438,500	5,144,000	47
Site Services Division	10,600	25,400	36,000	71
Environmental Safety, Health, and Quality Assurance	2,198,200	659,800	2,858,000	23
Engineering and Projects Division	7,602,000	6,287,000	13,889,000	45
Total	\$39,044,500	\$19,088,500	\$58,133,000	33

^aThis overhead cost consists of the following: Environmental Restoration Department overhead (\$6,175,600), Environmental Restoration Division overhead (\$498,200), and Environmental Restoration G&A and Site overhead (\$3,004,000).

^bThis percentage is for the Environmental Restoration Department labor pool only. Total department overhead is 33 percent. Other division overhead percentages shown are for their charges to the Environmental Restoration Department, including labor overhead and subcontracts.

Source: GAO's presentation of WSRC's budget data.

The \$19 million overhead amount for the Environmental Restoration Department excludes its subcontracting costs—totaling an additional \$21 million—because WSRC considers subcontracts as direct costs. These subcontracting costs are direct costs for WSRC because the subcontracts are for direct environmental restoration activities, such as site characterization analysis. The subcontractor's costs consist of both direct and overhead costs. About \$14 million of the \$21 million is for negotiated subcontracts, which are awarded on a task-order, as-needed basis to one or more pre-approved subcontractors. There are five of these subcontractors, each of which has subcontracts for 3 years. Each of the five subcontractors has different overhead costs, ranging from 39 percent to 65 percent. The average overhead amount for these subcontracts is about 51 percent of the total subcontract price. A cognizant audit agency, typically either the Defense Contract Audit Agency or the Environmental Protection Agency, approves overhead rates. However, these subcontracts are a small percentage of all WSRC subcontracts, and the overhead rates vary by subcontract, according to a WSRC contracting officer.

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Westinghouse Savannah River Company's
Overhead Costs at DOE's Savannah River
Site**

**Each Direct Employee Is
Allocated a Portion of Site,
Division, and Department
Overhead Costs**

Each direct employee is paid an hourly base rate that excludes employee benefits and overhead amounts. A portion of site support and G&A overhead costs is charged to each direct employee at the site. These costs include such items as Financial Management and Information Systems, Administrative Services, and Office of the WSRC President. Environmental Restoration and Waste Management Division overhead, charged to each direct employee in the division, includes Waste Management and Environmental Restoration's vice president and staff, the division's financial organization, division operational planning, cost improvement programs, program management organization, and division procedure preparation. Finally, each direct employee of the Environmental Restoration Department is allocated a share of the department's overhead, which includes items such as employee benefits, training, and the department's indirect employees (for example, administrative staff). Indirect employees, such as administrative staff and accountants, do not pick up additional overhead amounts, since their costs are already spread across the direct employees.

For example, in fiscal year 1993, the total cost, including overhead charges, budgeted for an environmental restoration engineer was about 2.8 times the direct salary charge. In this case, the engineer's salary was \$27.47 per hour. However, the total cost to the government was \$76.36 per hour when site support and G&A (\$15.25), divisional (\$2.65), and departmental (\$30.99) overhead costs were added. As a result, every \$27.47 of direct labor budgeted for a fiscal year 1993 project carries an overhead cost of \$48.89 per hour.

The Environmental Restoration Department's overhead costs equal 112.81 percent of an engineer's hourly base rate. The division's overhead is 9.66 percent, and G&A's and site support's overhead is 55.53 percent of the base rate, resulting in the total rate of 278.06 percent of an employee's hourly base rate. Table 1.4 illustrates the overhead amounts added to the above engineer's base rate for fiscal years 1992 and 1993.

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Site

Table 1.4: Hourly Cost of an Environmental Restoration Engineer for Fiscal Years 1992 and 1993

Fiscal year	Base rate	Department overhead costs	Division overhead costs	G&A and site overhead costs	Total costs
1993	\$27.47 ^a	\$30.99	\$2.65	\$15.25	\$ 76.36
Percentage of base rate	N/A ^b	112.81	9.66	55.53	278.06
1992	22.45 ^a	67.50	.81	28.90	119.66
Percentage of base rate	N/A	300.67	3.61	128.73	533.01

^aThis does not represent an increase in the base rate, but a department reorganization.

^bN/A = Not applicable.

Source: GAO's presentation of WSRC's budget data.

According to WSRC officials, the Environmental Restoration Department's overhead costs are high because this organization is in its relative infancy, only 2 years old. As WSRC hires more direct environmental restoration employees, the department's overhead will decrease per person because more employees will share the overhead costs, which are charged to the government in the hourly labor rate of the direct employees. As shown in table 1.4, the department's overhead was over twice as much in fiscal year 1992 as in fiscal year 1993, because managers, who are considered indirect employees, were the first employees in the department. In addition, because few projects had been started, most costs could not be charged directly to projects. Furthermore, some of these projects were not started because of the State of South Carolina's delays in issuing the permits necessary to start work. As a result, these initial costs were considered indirect costs.

Overhead Costs on Individual Environmental Restoration Projects

Many factors affect costs for an individual Environmental Restoration Department project, such as the type and degree of contamination at the project site and the amount of direct materials used. The amount of money in the overhead pools and the number of direct employees govern the amount of overhead that will be charged to a project. The use of subcontractors, laboratories, and other WSRC organizational units affect overhead costs, because the number of direct WSRC employees is reduced. For example, one project to clean up groundwater contamination had overhead costs of about 25 percent, while overhead costs for another groundwater project amounted to 43 percent. If, on a particular project, WSRC subcontracts most of the work, other projects will absorb more of the overhead costs. However, WSRC can allocate only the amount that is contained in the overhead pool. We present several tables in the remainder of this section to illustrate how overhead costs vary among individual projects. To demonstrate this variance, we selected the six projects costing more than \$3 million in fiscal year 1992. For instance, table 2.1 shows both direct and overhead costs for the six projects.

Table 2.1: Total Costs for Six Projects Costing More Than \$3 Million in Fiscal Year 1992

Project description	Direct costs	Overhead costs	Total costs	Overhead costs as a percentage of total costs
A/M area groundwater (ADS 302C)	\$ 3,381,505	\$ 2,591,014	\$ 5,972,519	43
RCRA/CERCLA basin investigations (ADS 306AA)	2,313,309	859,114	3,172,423	27
Planning budget control technical support (ADS 307A)	5,478,896	2,719,119	8,198,015	33
Mixed waste management facility groundwater (ADS 351C)	2,426,300	826,576	3,252,876	25
F/H area groundwater (ADS 470C)	4,392,568	2,284,254	6,676,822	34
Waste transfer (ADS 408D)	4,039,694	3,461,876	7,501,570	46
Total	\$22,032,272	\$12,741,953	\$34,774,225	37

Source: GAO's presentation of WSRC's accounting data.

The main reason overhead costs varied was that the project with the lower overhead rate made greater use of subcontracts, which are direct charges and reduce the number of WSRC direct employees, who are allocated the overhead costs. WSRC has established 3-year task order subcontracts with five subcontractors. The overhead rates of these subcontractors can be different, sometimes as much as 100 percent of the direct costs. A

**Section 2
Overhead Costs on Individual
Environmental Restoration Projects**

cognizant audit agency,¹ usually either the Defense Contract Audit Agency or the Environmental Protection Agency, approves these rates. Table 2.2 illustrates that in fiscal year 1992, projects with the highest amount of subcontracting costs generally have the lowest overhead costs, and those with the lowest amount of subcontracting costs have the highest overhead costs. Projects with the lowest overhead have few direct employees, and projects with high overhead have more direct employees.

Table 2.2: Comparison of Overhead Costs and Subcontracting Costs for Six Projects in Fiscal Year 1992

Project description	Overhead costs as a percentage of total costs	Subcontracting costs as a percentage of total costs
Mixed waste management facility groundwater (ADS 351C)	25	62
RCRA/CERCLA basin investigations (ADS 306AA)	27	53
Planning budget control technical support (ADS 307A)	33	25
F/H area groundwater cleanup (ADS 470C)	34	34
A/M area groundwater cleanup (ADS 302C)	43	28
Waste transfer (ADS 408D)	46	0

Source: GAO's presentation of WSRC's accounting data.

Cost for Six Projects

Each environmental restoration project is unique and contains different types of costs. An Activity Data Sheet (ADS) is the method DOE uses to report its activities or projects to Congress in its Five Year Environmental Restoration Plan. Tables 2.3 through 2.8 provide an analysis of costs for each of the six projects or ADSS that totaled more than \$3 million in fiscal year 1992. These projects, or ADSS, will continue due to future monitoring requirements. For example, groundwater cleanups may require 30 years of monitoring. In addition, current technology requires many years to clean up a site.

Project—Administrative and Manufacturing Area Groundwater Monitoring and Cleanup (ADS 302c)

This project is designed to monitor and clean up the groundwater beneath the administrative and manufacturing areas of SRS and is part of a comprehensive program that began in 1981. From the 1950s into the early 1980s, liquid waste from reactor fuel and target manufacturing operations

¹The cognizant audit agency carries out audit activities throughout a contract's life cycle. These activities include pre-award audits and, once a contract is awarded, incurred cost audits, which examine both the direct and indirect costs charged to the contract.

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was poured into a settling basin. The waste, containing heavy metals and chlorinated solvents, was discharged to the unlined basin, and most of the heavy metals sank to the bottom of the basin. About half of the solvents—organic degreasing solvents similar to the chemicals used in the dry cleaning industry—evaporated. However, monitoring wells installed in 1981 showed that the remainder had seeped into the water table, contaminating the groundwater. More than 300 groundwater monitoring wells have been installed at 80 locations throughout the area to monitor the contamination. This monitoring showed other sources of solvent contamination, including solvent storage tanks, the process sewer line leading to the basin, and an out-fall area where the waste water was discharged before the basin's construction. An estimated 450,000 pounds of solvents were discharged into the basin. Table 2.3 illustrates the cost elements of this project.

Table 2.3: Project—Administrative and Manufacturing Area Groundwater Costs for Fiscal Year 1992 (ADS 302c)

Cost elements	Direct costs	Overhead costs	Total costs
Labor	\$ 421,145		\$ 421,145
Department overhead		\$1,091,695	1,091,695
Division overhead		16,795	16,795
G&A and site overhead		571,041	571,041
Central service works engineering labor	693		693
Operating materials	16,958		16,958
Engineering costs	411,588	614,730	1,026,318
Travel	3,148		3,148
Subcontracts	1,654,916		1,654,916
Professional conference	995		995
Cost project labor	5,781		5,781
Environmental safety, health, and quality assurance	745,361	289,862	1,035,223
Savannah River Technical Center	116,585	3,433	120,018
Assigned maintenance order labor	4,335	3,458	7,793
Total costs	\$3,381,505	\$2,591,014	\$5,972,519
Overhead as a percentage of total costs			43

Source: GAO's presentation of WSRC's accounting data.

Project—RCRA and CERCLA Basin Investigations (ADS 306aa)

This project consists of the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) basin investigations to determine the contents of the

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basins at the SRS. The project includes the investigation, assessment engineering, and closure for the following basins:

- Six coal pile runoff basins that received rainwater runoff from the coal piles located throughout SRS and an ash basin that received runoff from powerhouse waste before disposal.
- Various acid/caustic basins. These basins were excavated earthen basins used for the disposal of spent sulfuric acid and diluted sodium hydroxide.
- Many oil and chemical basins throughout the SRS. These waste sites received oil-tinged waste water from production operations.
- R Reactor seepage basin, K Reactor seepage basin, and 108-4R overflow basin that received purge water from the process operations.
- F and H area retention basin, old F area seepage basin, and Warner's pond. These waste sites are excavated earthen pits used to collect waste water from process work in the separations area.

This project also includes the quarterly monitoring of wells associated with these waste sites. More than 50 percent of the total cost of this project is for subcontracts, making the overhead amount lower than the average. Table 2.4 illustrates the elements of cost for this project.

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**Table 2.4: Project—RCRA/CERCLA
Basin Investigations Costs for Fiscal
Year 1992 (ADS 306aa)**

Cost elements	Direct costs	Overhead costs	Total costs
Labor	\$ 168,866		\$ 168,866
Department overhead		\$438,878	438,878
Division overhead		6,752	6,752
G&A and site overhead		229,567	229,567
Central service works engineering labor	19,116		19,116
Operating materials	24,488		24,488
Engineering costs	67,550	43,862	111,412
Travel	979		979
Subcontracts	1,692,093		1,692,093
Environmental safety, health, and quality assurance	283,002	110,056	393,058
Savannah River Technical Center	8,430	15,385	23,815
Assigned maintenance order labor	33,223	14,614	47,837
Automated data processing	15,462		15,462
Rent/leases/licenses	100		100
Total costs	\$2,313,309	\$859,114	\$3,172,423
Overhead as a percentage of total costs			27

Source: GAO's presentation of WSRC's accounting data.

**Project—Planning, Budget,
Control and Technical Support
(ADS 307a)**

This project involves work that requires technical support and oversight and includes the development and implementation of a management plan for the environmental restoration technical support program. This plan includes required support from the Savannah River Technical Center for well sampling, infiltration experiments, closure coverage studies, groundwater modeling support, and other activities. This project will develop, implement, and maintain the Environmental Restoration Department's technical scope, cost, and schedule baseline control system in compliance with DOE Order 4700.1, which requires the development and production of monthly reports to aid in baseline management and control. This project provides cost-estimating support in the development of cost estimates required for baselines. Total Quality Management and training support for the Environmental Restoration Department, as well as consulting support for required financial requests, are part of this project. The Federal Facility Agreement with the State of South Carolina and the Environmental Protection Agency, as well as the 30-year plan, necessitates this project. Although this project appears to be an overhead project, WSRC considers the costs to carry out this project as direct costs because the

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costs are for a direct activity of the Environmental Restoration Department. SRS management assumes that the technical support requirements will remain constant throughout the environmental restoration program. Table 2.5 illustrates the elements of cost for this project.

Table 2.5: Project—Planning, Budget, Control and Technical Support Costs for Fiscal Year 1992 (ADS 307a)

Cost elements	Direct costs	Overhead costs	Total costs
Labor	\$ 272,575		\$ 272,575
Department overhead		\$ 671,359	671,359
Division overhead		10,329	10,329
G&A and site overhead		351,172	351,172
Central service works engineering labor	3,747		3,747
Operating materials	76,927		76,927
Engineering costs	1,034,285	345,029	1,379,314
Travel	22,379		22,379
Subcontracts	2,013,612		2,013,612
Training	5,700		5,700
Automated data processing	30,323		30,323
Environmental safety, health, and quality assurance	393,466	153,014	546,480
Savannah River Technical Center	1,597,907	1,188,216	2,786,123
Other expenses	27,975		27,975
Total costs	\$5,478,896	\$2,719,119	\$8,198,015
Overhead as a percentage of total costs			33

Source: GAO's presentation of WSRC's accounting data.

Project—Mixed Waste Management Facility Groundwater Cleanup (ADS 351c)

This project refers to the Mixed Waste Management Facility groundwater cleanup. The facility was the first SRS facility closed and certified under the provisions of RCRA as part of the site's environmental restoration program. The site's solid low-level radioactive waste is disposed of in the Low-Level Radioactive Waste Disposal Facility. At this 195-acre facility, permitted for radioactive but not hazardous waste, materials such as contaminated protective clothing, tools, and equipment were buried in 20-foot deep trenches. In 1986, SRS determined that a 58-acre section of the 195-acre facility, consisting of about 115 trenches, should be closed because the waste it received contained such materials as lead, silver, cadmium, and waste oils that are classified as mixed waste under RCRA. Mixed waste refers to waste that contains both radioactive and hazardous components.

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The groundwater in this 58-acre section is contaminated by mixed waste. This project is to clean up the groundwater in this 58-acre section of the closed facility. Subcontracts make up about two-thirds of the project cost, resulting in a lower-than-average overhead. Table 2.6 illustrates the elements of cost for this project.

Table 2.6: Project—Mixed Waste Management Facility Groundwater Cleanup Costs for Fiscal Year 1992 (ADS 351c)

Cost elements	Direct costs	Overhead costs	Total costs
Labor	\$ 131,605		\$ 131,605
Department overhead		\$340,323	340,323
Division overhead		5,236	5,236
G&A and site overhead		178,015	178,015
Operating materials	21		21
Engineering costs	98,923	134,487	233,410
Travel	771		771
Subcontracts	2,009,408		2,009,408
Rent/leases/licenses	1,709		1,709
Automated data processing	4,268		4,268
Environmental safety, health, and quality assurance	143,989	55,996	199,985
Savannah River Technical Center	35,606	112,519	148,125
Total costs	\$2,426,300	\$826,576	\$3,252,876
Overhead as a percentage of total costs			25

Source: GAO's presentation of WSRC's accounting data.

Project—F and H Area Material Processing Groundwater Monitoring and Cleanup (ADS 470c)

This project is for groundwater cleanup in the F and H material processing areas at SRS—the site's two primary separations operations. The missions of these facilities are to recover Uranium-235 and Neptunium-237 from spent reactor fuel; recover Plutonium-239 from irradiated, depleted uranium targets and alternate feeds; and convert Plutonium-239 to metal. Until 1988, when the F and H Effluent Treatment Facility opened, seepage basins were used to dispose of waste water from the separations facilities. Groundwater monitoring wells were installed in the 1950s to sample for radionuclides, primarily tritium. More groundwater monitoring wells were added in 1982-83, 1987-88, and again in 1990-91. Currently, almost 200 monitoring wells are sampled for a variety of chemical and radioactive contaminants. Groundwater monitoring results show radioactive tritium and chemical plumes, with elevated levels of some metals. Table 2.7 illustrates the elements of cost for this project.

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**Table 2.7: Project—F and H Area
Material Processing Groundwater
Costs for Fiscal Year 1992 (ADS 470c)**

Cost elements	Direct costs	Overhead costs	Total costs
Labor	\$ 213,707		\$ 213,707
Department overhead		\$ 537,396	537,396
Division overhead		8,268	8,268
G&A and site overhead		281,099	281,099
Central service works engineering labor	405		405
Operating materials	22,884		22,884
Engineering costs	1,074,314	925,580	1,999,894
Travel	3,743		3,743
Subcontracts	2,261,802		2,261,802
Professional conference	360		360
Automated data processing	2,591		2,591
Environmental safety, health, and quality assurance	618,363	240,474	858,837
Savannah River Technical Center	194,280	291,437	485,717
Burial ground	119		119
Total costs	\$4,392,568	\$2,284,254	\$6,676,822
Overhead as a percentage of total costs			34

Source: GAO's presentation of WSRC's accounting data.

Project—Waste Transfer (ADS 408d)

This project involves waste transfer, waste removal, and extended sludge processing and provides equipment and facilities to empty and clean 24 of the oldest high-level radioactive waste storage tanks in H area—a RCRA requirement. These facilities include pump support structures, slurry pumps, slurry pump motors, and associated equipment for salt dissolution and sludge suspension; transfer pumps for transfer of the sludge after suspension; transfer jets for transfer of the dissolved salt solution; and an equipment storage facility for staging the pumps and equipment. The design life of the facility is 50 years. This project is a separate line item in the budget. The Environmental Restoration Department paid to remove the waste from the H area tanks in fiscal year 1992 because the removal was considered a step in environmental restoration. However, the continuation of the project is considered waste management and will be included in future waste management budgets until completion. Table 2.8 illustrates the costs associated with this project.

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**Table 2.8: Project—Waste Transfer
 Costs for Fiscal Year 1992 (ADS 408d)**

Cost elements	Direct costs	Overhead costs	Total costs
Labor	\$3,605,094		\$3,605,094
Department overhead		\$2,437,576	2,437,576
Division overhead		336,823	336,823
G&A and site overhead		687,477	687,477
Direct materials	434,600		434,600
Total costs	\$4,039,694	\$3,461,876	\$7,501,570
Overhead as a percentage of total costs			46

Source: GAO's presentation of WSRC's accounting data.

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