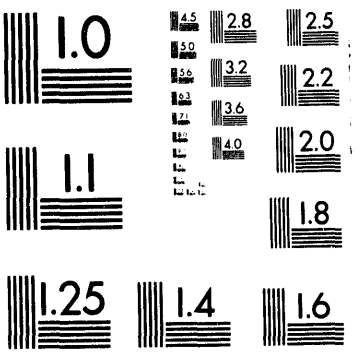
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DOE/IG-0340

U.S. Department of Energy
Office of Inspector General

January 1994

Report on

Audit of Staffing Requirements at the Westinghouse Savannah River Company

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DOE F 1325.8
(8-89)
EFG (07-90)

United States Government **Department of Energy**

memorandum

DATE: January 25, 1994

REPLY TO
ATTN OF: IG-1

SUBJECT: INFORMATION: Report on "Audit of Staffing Requirements at the Westinghouse Savannah River Company"

TO: The Secretary

BACKGROUND

Westinghouse Savannah River Company (Westinghouse) has increased its staff by over 4,000 employees since designated the management and operating contractor for the Savannah River Site in 1989. This increase occurred even though all the production reactors and the Naval Fuels Facility were shut down. The objective of the audit was to determine whether Westinghouse staffing levels were necessary to accomplish its assigned mission. The report is being sent to inform you of our findings and recommendations.

DISCUSSION

We found that if Westinghouse applied industry and federal performance work standards to its construction and management activities, it could reduce staffing levels by over 1,800 employees. The potential savings in salaries and benefits associated with such action could be about $399 million over a 5-year period. Also, additional staffing reductions could be attained through the use of engineering time standards in the maintenance and fabrication shops. The calculations related to reduced staffing are based on analysis derived through our review of maintenance workorders, construction tasks, productivity, and a Westinghouse study. Further, we found that Westinghouse significantly understated, in periodic reports to the Department, its actual staffing levels applied to accomplish contract requirements.

We recommended that future contracts at the Savannah River Site require the use of industry and performance standards to determine and justify their staffing requirements. We also recommended that Westinghouse apply performance standards to develop staff estimates for maintenance, construction, procurement functions, and ratio of manager to employee. In addition, improved controls should be exercised over the reporting of staffing levels by contractors at the Savannah River Site. If implemented, these recommendations will help Savannah River identify opportunities for reducing staffing levels and ensure that staffing levels are accurately reported. We realize that actual staffing reductions would be

largely determined by the manner in which the work standards are implemented and the levels of proficiency attained by the workforce.

The Manager, Savannah River Operations Office, has initiated actions to implement the recommendations in the report. Details of the findings are discussed in part II of the report. Management and auditor comments are in part III.

John C. Layton
Inspector General

Attachment

cc: Deputy Secretary
Manager, Savannah River Operations Office

US. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL

AUDIT OF

STAFFING REQUIREMENTS AT THE

WESTINGHOUSE SAVANNAH RIVER COMPANY

Report No.: DOE/IG-0340
Date of Issue: January 25, 1994

Eastern Regional Audit Office
Oak Ridge, TN 37830

AUDIT OF STAFFING REQUIREMENTS AT THE WESTINGHOUSE SAVANNAH RIVER COMPANY

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U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL
OFFICE OF AUDITS

AUDIT OF STAFFING REQUIREMENTS AT THE WESTINGHOUSE SAVANNAH RIVER COMPANY

Audit Report Number: DOE/IG-0340

SUMMARY

The Westinghouse Savannah River Company operates the Savannah River Site for the U.S. Department of Energy (Department) under a cost-plus-award-fee contract. Department policies require contractors to ensure a high level of performance in operating Department facilities by establishing operating standards, assessing performance against such standards, and holding contractor employees accountable for their performance. The purpose of the audit was to review Westinghouse's policies and practices for determining staffing requirements. Since assuming responsibility for the Savannah River Site in 1989, Westinghouse increased its staffing by over 4,000 employees. The Department had undertaken some actions to reduce the number of contractor employees at the Savannah River Site.

Our audit showed that the use of industry and federal performance work standards in its construction and management activities could enable Westinghouse to further reduce its staff by over 1,800 employees. The potential savings in salaries and benefits associated with such action could be about $399 million over a 5-year period. Additional staffing reductions could be attained through the use of engineered time standards in the maintenance and fabrication shops. In addition, Westinghouse significantly understated, in periodic reports to the Department, the personnel resources applied to accomplish contract requirements. Of course, the actual staffing reductions realized would be largely determined by the manner in which the work standards are implemented and the levels of proficiency attained by the workforce.

The Manager, Savannah River Operations Office, agreed with the findings and recommendations in this report and indicated that appropriate corrective actions would be taken on each recommendation. However, the Manager did not agree with the audit's estimate of staffing reductions that could be achieved in Westinghouse's procurement function from the use of appropriate productivity benchmarks.

Office of Inspector General

PART I

APPROACH AND OVERVIEW

PURPOSE AND OBJECTIVES

Since being designated as the management and operating contractor for the Savannah River Site in 1989, the Westinghouse Savannah River Company (Westinghouse) had increased its staff by over 4,000 employees. This increase occurred even though all the production reactors and the Naval Fuels Facility were shut down. In calendar year 1992, Westinghouse was reimbursed by the Department for over $700 million for salaries and benefits for Westinghouse employees.

The purpose of the audit was to review Westinghouse's policies and practices for determining staffing requirements. The objective of the audit was to determine whether Westinghouse staffing levels were necessary to accomplish its assigned mission.

SCOPE AND METHODOLOGY

The audit was performed from October 5, 1992, through April 23, 1993, at the offices of the Savannah River Operations Office (Operations Office) and Westinghouse in Aiken, South Carolina, and Departmental Headquarters in Washington, D.C. We also visited Martin Marietta Energy Systems, Inc. (Energy Systems) in Oak Ridge, Tennessee, and the EG&G Rocky Flats Company (EG&G) in Rocky Flats, Colorado, to obtain background data on their staffing policies and practices for the similar types of functions. Energy Systems, EG&G, and Westinghouse were management and operating contractors who were responsible for managing weapons production facilities. The audit primarily focused on activities and transactions for Fiscal Years 1992 and 1993 (through April 1993).

The following specific methodologies were used:

- Examined applicable Departmental orders and regulations;
- Reviewed pertinent provisions in the Department's contract with Westinghouse;
- Reviewed Operations Office and Westinghouse policies and procedures for developing, reviewing, and approving staffing levels for specific contractor functions;

- Examined records and reports prepared by contractors for the reporting of staffing;

- Interviewed Department and contractor officials who had direct authority and responsibility for the determination and approval of staffing levels;

- Compared Westinghouse staffing for selected functions with engineering and industry standards;

- Compared Westinghouse staffing for selected functions with staffing levels of other companies and Department contractors; and

- Analyzed periodic staffing reports submitted to the Savannah River Operations Office by Westinghouse.

The Westinghouse transactions used for comparison with industry and Federal agency standards and benchmarks were not selected on the basis of statistical sampling methodology. The use of such sampling methods was not feasible for maintenance and fabrication work orders because of deficiencies in Westinghouse's supporting documentation for the transactions.

The audit was made in accordance with generally accepted Government auditing standards for performance audits, which included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objectives. We assessed the significant internal controls with respect to developing and justifying the staffing needed to satisfy mission requirements. We also assessed the contractors' compliance with applicable Departmental regulations and contractual requirements.

We placed limited reliance on computer-generated data during this audit and, thus, did not test the reliability of the data. The only computer-generated data that we relied upon was that used to select construction projects and maintenance work orders, and to compare statistics on procurement activities. We reviewed supporting documentation in detail for the construction projects and maintenance work orders included in the audit. However, we did not test the reliability of the computer-generated statistics on procurement activities.

The firm of Irving Burton Associates, Inc., participated with the Department's Office of Inspector General in conducting the audit. Savannah River Operations Office waived an exit conference since the findings had been sufficiently discussed in prior meetings.

BACKGROUND

Mission of Savannah River Site

The Savannah River Site, owned by the Department, formerly produced plutonium and tritium and other nuclear materials for the Department of Defense, the space program, and private industry. It had five nuclear reactors for the fulfillment of this primary mission. However, the last three operating reactors were shut down in August 1988 for safety concerns. Also, the Naval Fuels Facility was shut down in September 1989. The Department had no plans at the time of the audit to activate any of the reactors or the Naval Fuels Facility.

Since April 1989, Westinghouse operated and maintained the Savannah River Site under a cost-plus-award-fee contract. Prior to April 1989, E. I. du Pont de Nemours and Company (Du Pont) was the management and operating contractor for the Savannah River Site. The contract is administered by the Savannah River Operations Office. Westinghouse's annual operating budget is about $1.6 billion.

Increases in Staffing Levels

In March 1989, just prior to its termination as the management and operating contractor for the Savannah River Site, Du Pont and its subcontractors had 17,372 employees. By January 1991, Westinghouse and its subcontractors had increased their staff to 21,690 and had plans for further increases in staffing levels for future years. Subsequently, the Department initiated actions to have Westinghouse reduce its staffing levels and by February 1993, the staffing had declined to just below 22,000. A breakdown of the February 1993 staffing by functional area follows.

Table 1

Westinghouse Staffing by Functional Area

Functional Area	Number of Employees
Engineering and Projects	6,498
Nuclear Materials Processing	3,241
Waste Management and Environmental Restoration	2,484
Site Services	2,266
Environmental, Safety, Health and Quality Assurance	1,833
Savannah River Technology Laboratory	1,571
Reactor Restart	1,287
Administrative Services	1,114
Financial Management and Information Systems	910
Safeguard, Security, and Emergency Preparedness	380
Human Resources	211
Office of the Vice President, Public Relations and Counsel	183
Total	21,978

Departmental Contracting Practices

A primary criterion in the Department's selection of its management and operating contractors is their demonstrated management skills and expertise in operating their own industrial facilities. The Department expects these contractors to apply the same expertise, skills, and prudence to the management and operation of the Department's facilities as they apply to their commercial production facilities.

A common practice for the management and operation of commercial facilities is the extensive reliance upon performance (operating) standards to determine staffing requirements for specific functions. A performance standard defines operating

objectives, establishes expected performance levels, clearly assigns responsibilities, and is developed through the application of various methodologies. For example, a performance standard may be based on time-and-motion studies or on the basis of historical operating experiences within an industry or an individual company.

In our opinion, the use of cost-plus-award-fee contracts with management and operating contractors provides little incentive for contractors to control costs and staffing levels, especially since the fee is based in part on the estimated contract costs.

Prior Audits

We issued two prior audit reports that addressed the need for work/cost standards at the Savannah River Site. In a September 1990 audit report entitled "Department-wide Audit of Architect and Engineering Design Costs," we recommended that the Department develop architect and engineering cost standards based on private industry cost experience for all conventional construction projects. Departmental Headquarters concurred with the report recommendations. In a February 1992 audit report entitled "Central Shops Fabrication at the Savannah River Site," we recommended that the Operations Office direct Westinghouse to establish and implement the use of engineered standards for all fabrication work. The Operations Office concurred with all recommendations in that report.

OBSERVATIONS AND CONCLUSIONS

Departmental Headquarters' officials expressed concerns in 1991 that Westinghouse had more employees than were necessary to satisfy mission requirements and twice had directed reductions in staffing levels at the Savannah River Site. However, the Department-directed reductions were not based on any studies or analyses of staffing requirements for individual functions. Westinghouse initiated actions to identify opportunities for reducing staffing levels but had realized minimal benefits from these initiatives.

Despite these initiatives by the Department and Westinghouse, our audit disclosed that staffing levels at Westinghouse were still in excess of those required for the accomplishment of mission requirements. Specifically, we identified two areas where the Department could improve controls over Westinghouse staffing.

1. Inefficient Staffing Practices. Westinghouse could reduce its staffing by over 1,800 positions, with potential savings of $399 million over 5 years, if it relied more upon industry and Federal agency standards in determining staffing requirements. This savings does not include potential staffing reductions available from the use of engineered time standards in the maintenance and fabrication shops. The actual staffing reductions realized by Westinghouse will be heavily influenced by the manner in which the report recommendations are implemented and the subsequent levels of proficiency attained by the Westinghouse workforce. See Finding 1, Page 9.

2. Controls Over Contractor Staffing Levels. Westinghouse, in periodic staffing reports to the Department, had underreported by about 1,765 the number of personnel being used by Westinghouse to perform contract functions. This occurred because it excluded from such reports those employees working on fixed-price subcontracts and employees working overtime to fulfill normal work requirements. Such underreporting of staffing impaired the ability of the Operations Office to effectively administer staffing levels and contract costs. See Finding 2, Page 34.

The internal control weaknesses associated with staffing targets were significant enough that the Operations Office should include them in its yearend assurance memorandum on internal controls. Also, we do not believe that Westinghouse fully complied with the intent of Departmental Orders 4330.4A "Maintenance Management Program," and 5480.19, "Conduct of Operations Requirements for DOE Facilities." The internal control weaknesses and Westinghouse's noncompliance with applicable Departmental orders are discussed in further detail in Part II of this report. Because our audit was limited, it would not necessarily have disclosed all internal control and compliance deficiencies that may have existed.

PART II

FINDINGS AND RECOMMENDATIONS

1. Inefficient Staffing Practices.

FINDING

Departmental policies require Westinghouse to operate cost effectively and to establish and implement performance standards for its employees. However, Westinghouse had not implemented those performance standards needed to promote efficiencies and cost effectiveness in the staffing levels for the management and operations of Departmental facilities at the Savannah River Site. The causes of this condition were that the Department had not issued definitive and mandatory policy guidance and Westinghouse had not implemented policies that required the use of performance standards in determining staffing requirements for functional areas. We estimate that the application of industry and Federal performance standards and benchmarks would enable Westinghouse to reduce staffing levels by over 1,800 positions, with potential savings of about $399 million over 5 years. Additional staffing reductions, possibly involving several hundred positions, could be attained by Westinghouse through the use of engineered time standards in the maintenance and fabrication shops. The actual staffing reductions realized by Westinghouse will be determined by the manner in which the work standards are implemented and proficiency levels ultimately achieved by the workforce.

RECOMMENDATIONS

We recommend that the Manager, Savannah River Operations Office, issue policy guidance and incorporate such policy guidance in future contracts to require management and operating contractors at Savannah River Site to use industry and Federal Government performance standards and industry benchmarks in determining and justifying their staffing requirements.

We recommend that the Manager, Savannah River Operations Office, require Westinghouse to:

1. Apply engineered time standards for development of labor estimates for individual work orders and the staffing of maintenance and fabrication functions;

2. Require that industry standards be used to develop cost estimates for conventional-type construction projects;

3. Institute controls to ensure that the cost of engineering design work falls within industry or Federal Government standards for such work;

4. Develop and implement definitive plans, with realistic milestone dates, to increase the ratio of subordinate employees to managers and reduce the levels of management;

5. Develop actions to improve the productivity of the Procurement Division, including the use of appropriate benchmarks; and

6. Issue definitive policy guidance on the purpose of safety meetings and criteria as to the frequency and duration of such meetings.

MANAGEMENT REACTION

The Manager, Savannah River Operations Office, concurred with each of the recommendations and indicated that appropriate corrective actions would be taken. The Manager did not agree with the audit estimate of potential staffing reductions for the Procurement Division.

DETAILS OF FINDING

PERFORMANCE STANDARDS

Under the terms of its contract with the Department, Westinghouse is responsible for providing services required under the contract cost effectively. Also, one of the factors to be considered in determining the allowability of contract costs is reasonableness, which includes the exercise of prudent business judgment.

Departmental Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," dated May 18, 1992, sets forth the requirements and guidelines to be followed by contractors in the operations of Departmental facilities. The order states that the Department's policy is that Departmental facilities should be managed on the basis of a consistent and auditable set of requirements, standards, and responsibilities. Contractors are required to organize and administer operations in a manner that will ensure a high level of performance. Such a high level of

performance is to be primarily achieved by establishing formal performance standards, monitoring performance periodically, and holding employees accountable for their performance.

A performance standard defines operating objectives, establishes expected performance levels, clearly assigns responsibilities, and is developed through the application of various methodologies. For example, time-and-motion studies may be conducted to develop engineered time measurement standards that provide the time required by a qualified employee to complete a specific task. Or standards may be developed on the basis of historical operating experiences within an industry or an individual company. Benchmarking is a technique that is most widely used in the private sector for developing standards or guidelines for staffing levels for individual functions or organizations. Under this technique, optimum staffing levels are developed by relying upon the standards or best practices of an industry or another company.

If staffing requirements are based primarily on subjective judgments or the availability of funds, the Department has no basis for evaluating the reasonableness and cost-effectiveness of the staffing and related costs for individual management and operating contractors.

STAFFING REQUIRED FOR MISSION ACCOMPLISHMENT

Westinghouse's staffing levels substantially exceeded those needed for efficient and cost-effective accomplishment of mission requirements. This condition is based on our comparison of Westinghouse staffing levels with those provided under various performance standards. We selected performance standards used by other Federal departments and agencies and companies, and standards derived from industry performance data. To the extent possible, we attempted to apply those performance standards that were used by other management and operating contractors who managed facilities similar to those managed by Westinghouse. Specifically, we compared:

- Actual labor hours for maintenance and fabrication projects with hours set forth in the Navy's engineered time standards,

- Westinghouse standard times for construction tasks with experience of firms in the construction industry for similar tasks,

- o Average costs for architect and engineer design work with the industry cost experience for similar work,

- o Number of Westinghouse managers with the number of managers on the staff of Energy Systems and EG&G,

- o Number of Westinghouse procurement personnel with the staffing of Energy Systems and EG&G procurement organizations, and

- o Westinghouse practices for controlling the length of safety staff meetings with a major chemical company and Energy Systems.

Based on the results of the above comparisons, we concluded that Westinghouse could eliminate over 1,800 positions through the application of performance standards used by Federal agencies, construction industry, contractors, or private sector companies. This number does not include the staffing reductions that may be realized through the application of engineered time standards in the Westinghouse maintenance and fabrication shops. Details on the results of our comparisons are discussed in the following sections of this report.

Westinghouse had initiated actions to compare its staffing requirements with the staffing practices of other companies. For example, the Reactor Restart Division, in planning for the potential restart of the reactors, had compared its computed staffing requirements with those of several other companies. As discussed on page 23 of this report, Westinghouse had compared its staffing requirements for managers with the staffing practices of other companies and divisions of Westinghouse Electric Corporation. Also, Westinghouse had done some preliminary work in benchmarking its staffing needs for hourly workers. However, for several reasons, none of these initiatives was completed and implemented at the time of our audit.

Engineered Time Standards

Departmental Order 4330.4A, "Maintenance Management Program," provides policy guidance on the management of maintenance programs. The purpose of this order is to provide general policy and objectives for a cost-effective and efficient maintenance program. The order provides for a work control system that includes work performance time standards, and processes to compare actual performance against performance standards in order to measure efficiency and identify problems hindering performance. The Departmental order refers to

engineered time standards as one type of performance standard but does not mandate their use.

The experiences of other companies had demonstrated that work measurement techniques, such as time standards, were very beneficial in projecting personnel needs, controlling inventories, and pinpointing areas of inefficiency. They provide an objective and consistent basis for developing time estimates for individual maintenance projects and for improving the scheduling of the work for maintenance shop employees. Also, the evaluation and analysis of actual performance against engineered time standards enables management to promptly identify and correct problems.

Other companies and Federal agencies had experienced improvements in performance of up to 50 percent from the use of engineered time standards. A maintenance division of Energy Systems used the standards to improve its productivity by 50 percent. A major factor contributing to the increased efficiency was that the standards enabled contractor personnel to eliminate major scheduling and logistics support problems that had previously caused significant production problems.

Maintenance Work

The Westinghouse maintenance shops could improve their efficiency and productivity by 40 percent based on our comparison of actual hours and engineered standard hours from a limited sample of Westinghouse maintenance work orders.

Westinghouse operated 15 maintenance shops with over 3,000 employees, including 2,150 hourly employees. Our audit focused on the Central Maintenance shop, which had 850 employees (including 605 hourly employees), and the maintenance shop for the Reactor Restart Division, which had a staff of 342 employees (including 219 hourly employees). The Central Maintenance shop was responsible for such common functions as the maintenance of vehicles, roads, radios, motors, electronic components, grounds and some buildings. The Reactor Restart Maintenance shop was responsible for the reactors and related buildings and support equipment.

We selected work orders from the two Westinghouse maintenance shops and had employees from another Department contractor, which used Navy engineered time standards, estimate the standard hours required to accomplish these work orders. Employees of the other contractor were able to provide engineered standards for eight of the work orders we selected. We had

planned to use a larger sample of work orders, but the information contained in the work orders did not provide sufficient information to make comparisons. The following table shows a comparison of the actual and estimated hours for the Westinghouse maintenance shops with the Navy engineered time standards for each of the eight work orders.

Table 2

Comparison of Navy Standard and Westinghouse Hours For Selected Maintenance Work Orders

Task	Westinghouse Est. Hours	Westinghouse Actual Hours	Navy Eng. Hours	Effic. Level 1/
Monthly Lubrication	50	24	12	50%
Inspect Air Handler	2	3	2	67
Battery Maintenance	10	4	2	50
Change 5 Filter Cartridges (4 work orders)	16	10	3	30
Change 9 Filter Cartridges	42	7	5	71
Totals	120	48	24	50%

1/ Efficiency level was computed by dividing Navy engineered standards by actual Westinghouse hours.

An example of the differences between Navy engineered standards and Westinghouse estimates is the time required to change cartridges in water filters for drinking fountains (see Exhibit). All that is required to change a cartridge is for the maintenance employee to turn off the water supply, unscrew the cartridge holder, remove and replace the cartridge, screw the cartridge holder in place, and turn on the water supply. The supplier of the water filter claims that no more than 5 minutes should be required to change a cartridge. The cartridges are replaced every 2 months, and Westinghouse used 5,410 cartridges during a recent 12-month period.

Westinghouse practices for changing water filter cartridges were very inefficient when compared to the times allowed for such work under the Navy's engineered time standards. The Navy standard is 12 minutes to change one cartridge and 19 minutes to change two cartridges located in the same area. The standard provides additional time for such items as traveling, setting-up, and putting away tools, the time is rounded to the next hour; thus, the time to replace one or two cartridges is 1 hour. As shown in the above table, Westinghouse estimated 16 hours to change five cartridges located in two buildings compared to a Navy standard time of 3 hours. The actual time recorded was 10 hours, and the estimated maintenance shop billing for the 10 hours is $301, or $60 per cartridge. Another Westinghouse maintenance shop estimated 42 hours to change nine cartridges in a building, and the actual time was 7 hours. These times compare to a Navy standard time of 5 hours.

The adoption of the Navy's engineered time standards in itself will not necessarily result in improved efficiency and gains in productivity. Other actions are needed by Westinghouse to improve the efficiency and effectiveness of its maintenance operations. Specifically, the Westinghouse maintenance work control systems did not contain accurate data on actual hours. For example:

- Classifying meetings, training, housekeeping, and miscellaneous activities as preventive maintenance work misrepresents the extent of preventive maintenance and hours used for maintenance work.

- Actual hours were not recorded in the work control system for some maintenance work orders.

- For other maintenance work orders, only a portion of the actual direct labor hours were entered in the work control system. For example, a test of time sheets covering a 3-week period for one work group showed that 27 percent of the actual hours worked on the work orders were not shown in the work control system.

Inadequate estimates and unreliable actual hours effectively precluded Westinghouse from performing meaningful analyses and evaluations to identify performance problem areas and root causes of the problems, and to develop corrective action plans.

Westinghouse had considered the use of the Navy's engineered standards but had decided against their use. These officials did not believe that the standards directly related to the type of maintenance work they performed and that additional resources

would be required to implement the standards.

As demonstrated by these examples, the Navy's engineered standards do have application to Westinghouse maintenance work and are used by Energy Systems, who operates similar facilities. The Navy's engineered standards are available in a computerized version, and their use would likely reduce, not increase, resource requirements.

We were unable to estimate with a high level of confidence the total number of positions that could be eliminated from the maintenance shops through the use of engineered standards. This was because of deficiencies in the accuracy and completeness of planning and performance data for the Westinghouse maintenance shops. That is, most of the work order planning files we reviewed did not contain sufficient data to permit the use of the Navy's engineered time standards to develop labor hour estimates. Also, the Westinghouse maintenance shops did not maintain accurate and complete performance data.

Fabrication Work

A comparison of Navy engineered time standards with Westinghouse time standards and actual hours for a limited number of fabrication work orders also indicated significant inefficiencies in the fabrication area. If our sample represents actual conditions in the fabrication work area, then Westinghouse's adoption of the Navy standards could lead to significant reductions in the staffing of the Westinghouse Fabrication Shop.

A prior Office of Inspector General audit report (number ER-B-92-03, dated February 26, 1992) "Central Shops Fabrication at the Savannah River Site," recommended that the Westinghouse Central Fabrication shop use engineered standards for estimating workload and determining staffing requirements. Subsequently, the Central Fabrication shop developed local standards for fabrication tasks that were based on local experience and judgments.

To test the reliability of the local standards, we requested another Departmental contractor to compute the hours required for complete work orders and individual tasks based on Navy engineered time standards. One or more tasks could be included in a work order. The following table shows that the Westinghouse estimates for the work orders and tasks were substantially higher than the time specified by Navy engineered time standards. Also, the actual hours charged by the Central Fabrication shop were

almost four times the Navy standards. Another Departmental contractor had attained a 70-percent proficiency level of the Navy standards as compared to the 23-percent proficiency level for Westinghouse on the four work orders.

Table 3

Comparison of Navy Standard and Westinghouse Hours For Selected Fabrication Work

Description	Westinghouse Est. Hours	Westinghouse Actual Hours	Navy Std. Hours	Effic. Level
Fabricate 18-foot metal ladder	127	139	38	27%
Fabricate duct work	61	60	7	12
Fabricate duct work	96	96	8	8
Prepare and install hat stickers	61	61	28	46
	345	356	81	23%

This condition existed because the standards developed by the Westinghouse Fabrication Shop did not meet the criteria for engineered time standards. That is, the estimates were not based on time-and-motion studies, and the methods used to develop the estimates were not documented.

As was the case with the maintenance shops (see page 13), incomplete and inaccurate record keeping precluded us from developing precise estimates of the total staff reductions that the Westinghouse Fabrication Shop could realize from the use of engineered time standards.

Industry or Federal Agency Construction Standards

Various commercial organizations and Federal agencies have developed standards and detailed cost data for construction tasks and engineering design work. The standards are based on industry experience and are used by construction companies and certain Federal agencies to develop cost estimates, to determine staffing requirements, and to control costs for construction projects.

Westinghouse was not making use of these construction standards in determining staffing needs and controlling the cost of construction activities at the Savannah River Site. This condition applied to both the use of standards for determining labor hours for construction tasks and design costs for construction projects.

Construction Tasks

Westinghouse's guidelines for determining labor hours for construction tasks substantially exceeded those used in the construction industry for similar work tasks. The hours in a commercial manual were 13 percent lower than the Westinghouse estimates for the 29 construction tasks we reviewed. Assuming that the sample construction tasks were representative and that Westinghouse obtained the same performance level as set forth in the commercial manual, Westinghouse could reduce its construction workforce by 348 employees.

Data for estimating the cost of construction projects are available from a variety of sources. Westinghouse estimators had the option of using either Westinghouse estimating guidelines or construction industry cost guidelines. The Westinghouse estimating guidelines were based on cost experience in the construction of commercial power plants and were adjusted for historical experience at Savannah River Site. Industry cost guidelines are published by several companies. One of these companies is the R. S. Means Company, which publishes an annual building construction cost data manual. The Means manual is highly regarded and recognized throughout the construction industry as a source of reliable cost data. The Means manual reflects the actual experience of construction companies and shows time and cost for various construction tasks.

Westinghouse estimating guidelines for construction work tasks were substantially higher than the times set forth in the Means cost manual. We compared the estimated times in the Westinghouse estimating guideline for production support and general facilities with comparable tasks in the 1993 Means cost data manual. As shown in the following table, the Westinghouse estimating guidelines were much higher than the Means manual.

Table 4

Comparison of Westinghouse and Means Estimates For Completing Selected Construction Tasks

Task	Unit of Measure	Hours Required	
		Westinghouse	Means
Painting (2 coats)	S.F.	0.030	0.012
Hauling/Dumping	C.Y.	0.220	0.094
Grass Seeding	S.Y.	0.017	0.005
Backfill/Compact Dirt	C.Y.	1.500	1.326
Precast Concrete Wall Panels (Install)	S.F.	0.200	0.125
Precast Concrete Tilt-up (Install)	S.F.	0.200	0.068
Metal Decking (Install)	S.F.	0.100	0.034
Rough Sheathing	S.F.	0.030	0.025
Metal Windows (Install)	Each	4.000	2.667
Wood Windows (Install)	Each	4.000	2.667
Drywall (Taped/Finished)	S.F.	0.040	0.021
Acoustic Ceiling (Install)	S.F.	0.070	0.053

Legend: S.F. - square foot
C.Y. - cubic yard
S.Y. - square yard

To demonstrate the impact of the differences, we compared the hours estimated by Westinghouse for 29 tasks on a construction project with the hours shown in the Means manual. The hours in the Means manual were 13 percent lower than the Westinghouse estimates for the construction project. For example, the Means manual showed 4 hours for placing 700 square feet of wire mesh for concrete work, while the Westinghouse estimate for this task was 7.7 hours.

The higher Westinghouse estimates existed because Westinghouse procedures provided that estimates were to be based on "what it will cost," not on "what it should cost." As a result, the estimates contained built-in inefficiencies and precluded an objective analysis of actual performance. By contrast, Energy Systems and EG&G Rocky Flats both used construction industry guidelines to develop estimates for construction tasks.

If Westinghouse's approximately 2,600 construction employees were able to obtain the same performance level as set forth in the Means manual, Westinghouse could reduce its construction workforce by 13 percent, or 348 employees. The annual salary and benefits for 348 construction employees totals about $15 million.

Engineering Design

Westinghouse's architect and engineering design costs substantially exceeded goals established by the Department and incurred in the private sector. If Westinghouse reduced engineering design costs to the same level as the private sector, it would be able to reduce the engineering design workforce by 35 employees.

The Office of Inspector General in an audit report (number DOE/IG-0289) entitled "Department-wide Audit of Architect and Engineering Design Costs," dated September 18, 1990, found that the Department's architect and engineering design costs were more than twice the 5.4-percent private industry average on comparable projects or the 6-percent limit observed by other Federal agencies. The report recommended that the Department develop standards for architect and engineering costs that were based on private industry experience. Subsequently, Departmental Headquarters established a Departmental goal in 1992 of attempting to meet the 6-percent limit observed by other Federal agencies.

Nevertheless, the guidance issued by Departmental Headquarters to implement the audit recommendations has resulted in an understatement of total architect and engineering design costs. The Department identified the costs to be classified as design costs and those to be excluded and classified as engineering service costs. The implementing Departmental guidance contained a sample construction project with total estimated construction costs of $10 million. Included in the project costs was $250,000 for engineering services. We determined that 72 percent of engineering service costs in the example would be classified as architect and engineering design

costs in both industry cost manuals and our model of design costs.

With the assistance of a registered architect, we reviewed the architect and engineering design costs for 6 conventional construction projects of Westinghouse. The projects, whose estimated construction cost were $269 million, were randomly selected from a list of line-item construction projects identified by the Operations Office as conventional-type construction projects. All the design cost estimates were prepared after the date of the Office of Inspector General audit report, and 4 of the 6 were prepared before implementation of the new Departmental guidance on the 6-percent cost goal. For the two design cost estimates prepared after the implementation of the new Departmental guidance, the estimates were substantially in excess of 6 percent of estimated construction costs. Based on a model developed by the registered architect that compensated for differences in costs between the Federal and private sectors, we computed the architect and engineering design costs for comparable projects in the private sector. We met with Westinghouse staff to determine any uniqueness of the projects at Savannah River Site and adjusted the estimated costs appropriately.

We determined that Westinghouse's design costs were significantly higher than design costs for comparable projects in the private sector. Table 5 is a comparison of our estimated architect and engineering design costs for the 6 construction projects with Westinghouse's estimated design costs.

Table 5

Comparison of Estimated Engineering Design Costs
For Selected Construction Projects

Project	Estimated Costs		
	Westinghouse	OIG	Difference
	(in millions)		
Hazard/Mixed Waste Facility	$11.5	$ 6.4	$ +5.1
Burial Grounds II	1.7	.8	+ .9
Environmental Modifications	2.3	.8	+1.5
Training Center	1.3	.6	+ .7
Operations Support Facility	1.4	1.0	+ .4
Engineering Support Facility	.9	.3	+ .6
Totals	$19.1	$ 9.9	$+ 9.2
Percent of Total Estimated Construction Cost	7.1%	3.7%	

A Westinghouse estimate for an engineering support facility building exemplifies the difference. This building is almost identical to a building previously designed at the Savannah River Site. We estimated design costs of $460,000, or 4.5 percent, for the building, because it was an average office building. We increased the estimated design costs by $49,000 because it was a Government construction project, then we reduced the design costs by 40 percent because Westinghouse had previously designed a similar building. Our method resulted in an estimate of $306,000, or 3 percent of the estimated construction costs for the building. In contrast, Westinghouse's estimate for design costs was $940,000, or 9.2 percent of the construction costs.

Westinghouse officials stated that industry average costs for design work were not comparable with the requirements of design work for Government construction projects. They stated that design costs in the Department were higher because of various regulatory and legal requirements. For example, extensive coordination was required with numerous organizations and the voluminous and detailed documents required for the design process.

For this reason, the model we used to compute design costs was adjusted upward to compensate for the additional costs for performing design work in the Federal sector. Additional cost factors for Government work included the more extensive selection and negotiation process involved with architect and engineer design contracts, the need for more detailed drawings, increased administrative and documentary requirements, and more extensive review and revision of completed drawings.

If Westinghouse reduced engineering design costs to the same level as the private sector, it would be able to reduce the engineering design workforce by 35 employees. The average annual salaries and benefits for the 35 design employees was about $3 million.

Best Practices

Many companies in the private sector are seeking and applying the best practices or experiences of other companies that are industry leaders. These best practices or experiences are used as benchmarks to improve their own competitiveness and cost effectiveness. Westinghouse had not applied these best practices of other companies, including other management and operating contractors, to its operations. Significant opportunities for staffing reductions at Westinghouse existed through the application of the best practices concept to the areas of span of management control, and procurement functions, and duration and frequency of safety staffing meetings.

Span of Management Control

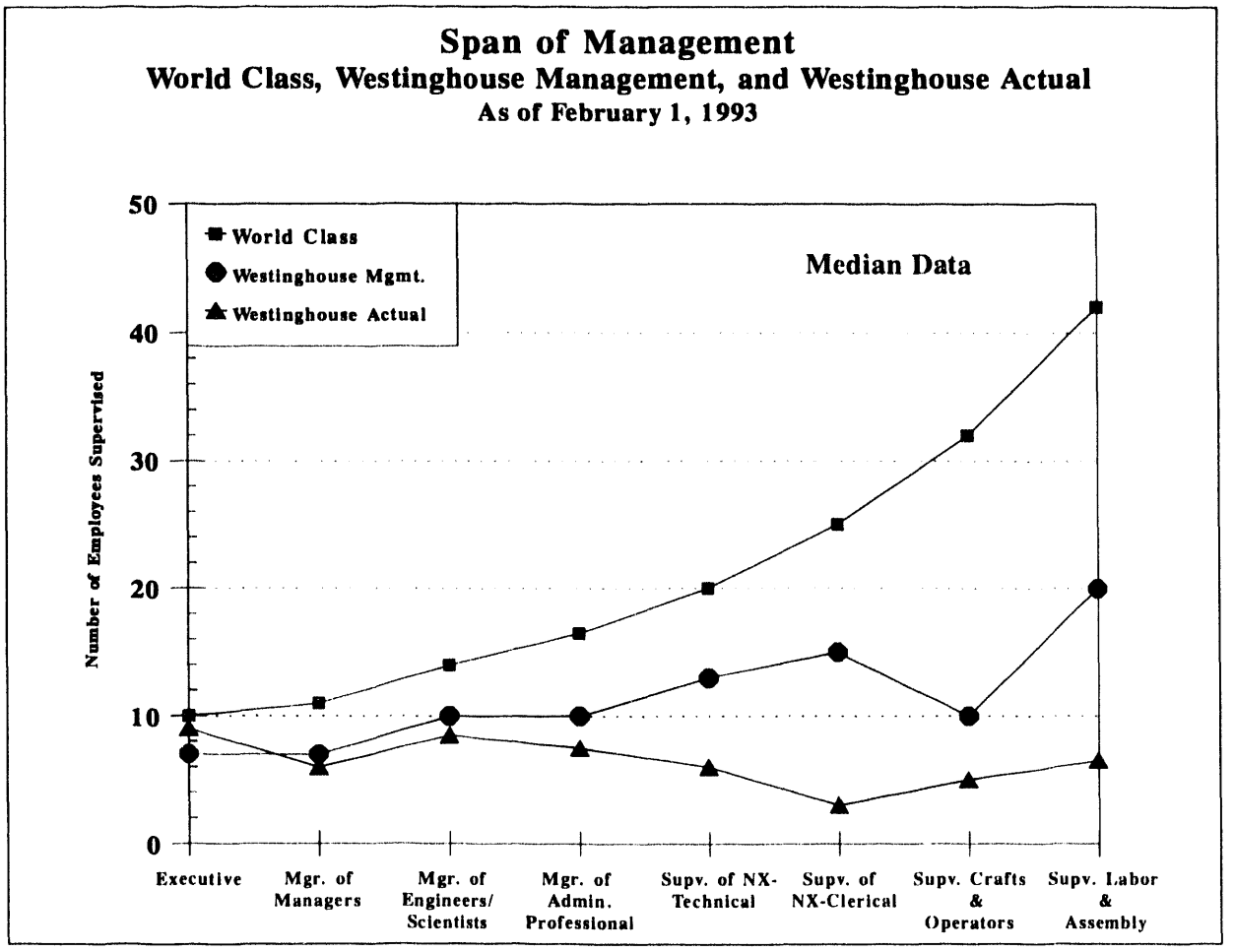
Using data from Westinghouse's study, we determined that Westinghouse had an excessive number of managers in relation to those of other management and operating contractors. The two other contractors had a lower ratio of managers to workers than Westinghouse, and one of the contractors had definitive plans to further reduce the number of managers. Also, Westinghouse had about twice as many layers of management as planned or attained by the other two contractors. We estimated that Westinghouse could eliminate 1,206 manager positions.

In July 1991, Westinghouse initiated a study of the ratio of managers to workers and the number of management levels within Westinghouse. The study covered eight categories of labor and considered opinions (expectations) of senior Westinghouse

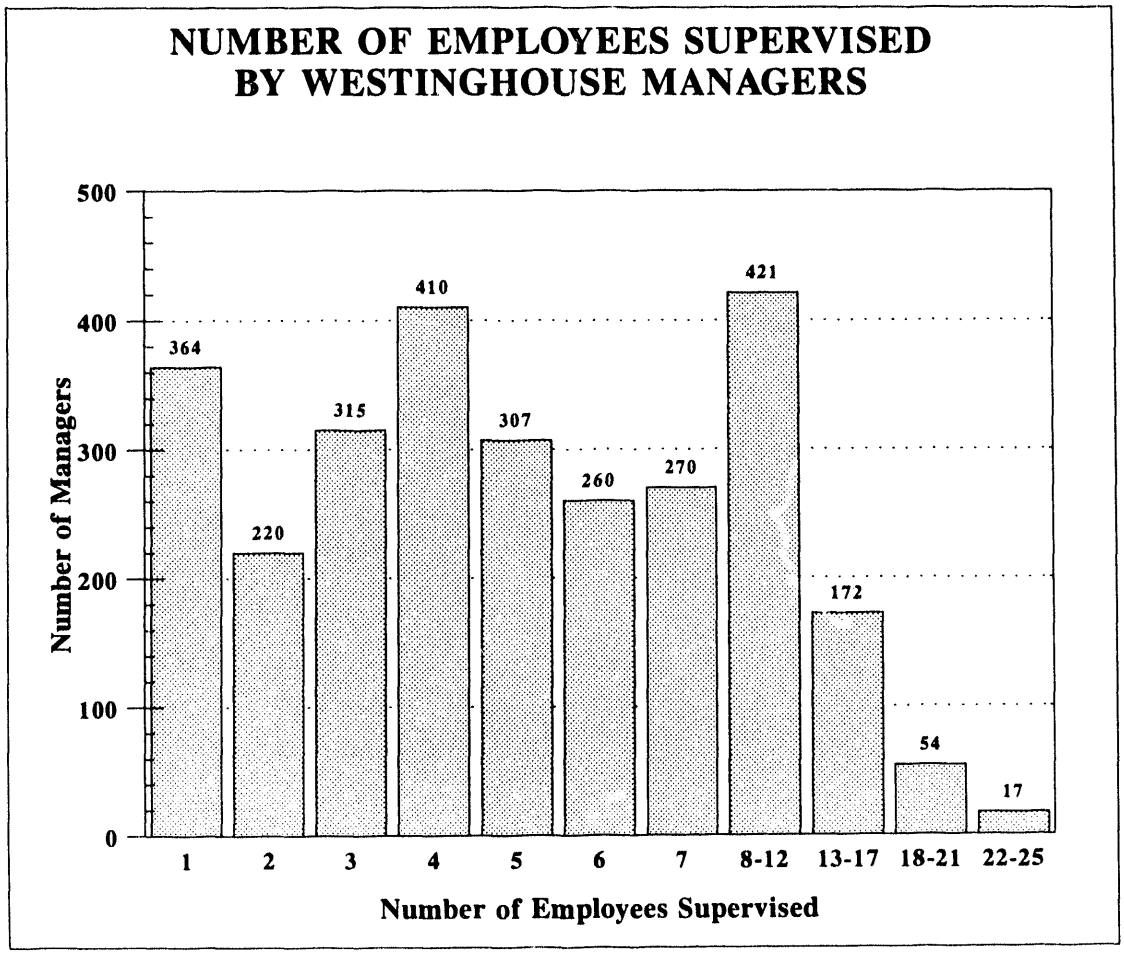
management as to the optimum ratios for managers. The study, which was still underway at the time of the audit, included a comparison with other companies and other elements of the Westinghouse Electric Corporation.

Two factors should be considered in evaluating the number of managers: the ratio of managers and subordinates, and the number of layers of management. If an organization had five managers that supervised 30 employees, the ratio of managers to subordinate employees would be 1 to 6 (usually expressed as 1:6). Eliminating two managers would increase the ratio to 1:10. Management levels or layers represent the number of managers between the highest official in an organization to the lowest ranking employee. The current trend in the private sector is to reduce the number of managers in relation to subordinates as well as the number of layers of management.

Number of Managers. Westinghouse had an excessive number of managers based on the study. As of February 1993, Westinghouse had a ratio of managers to subordinate employees of 1:5.8 and had up to 9 layers of management. The study group had surveyed Westinghouse management as to their opinions on the ratio of managers and found that management considered the optimum ratio to be almost twice as high as the actual ratio. The following chart, prepared by the Westinghouse study group, shows for eight labor categories (1) the ratios for a world class company (a company with world-wide operations that had been consistently recognized as a leader in efficiency, quality and cost control within its industry); (2) ratios recommended by Westinghouse senior management officials; and (3) actual ratios as of February 1, 1993. The appendix provides details of this study.



Significant numbers of Westinghouse managers supervised small numbers of subordinates. The following graph, based on a draft provided by the Westinghouse study group, shows the number of managers who supervised specific numbers of workers. For example, 364 managers supervised 1 worker, 220 supervised 2 workers, 315 supervised 3 workers, and so forth. In fact, 58 percent of the Westinghouse managers supervised 5 or fewer employees.



Westinghouse had significantly more managers per employees than did two other major Departmental management and operating contractors -- Energy Systems and EG&G. Energy Systems' ratio was 1:6.7, and EG&G's ratio was 1:8.7. EG&G had increased its ratio by 43 percent (from 1:6.1 to 1:8.7) in the last 3 years. A major business unit of Energy Systems had definitive plans to increase its ratio of managers to 1:10 within the next 2 years.

Layers of Management. Further, Westinghouse had about twice as many layers of management as planned by the other two management and operating contractors. Westinghouse had up to nine layers of management. In comparison, EG&G had five management layers and a major business unit of Energy Systems also planned to reduce the layers of management to five.

In contrast to Energy Systems and EG&G, Westinghouse had no plans to establish definitive goals and milestones for reducing the ratio of managers to workers or the layers of management. The Westinghouse study group did not plan to recommend specific goals or targets in its final study report. Instead, the study group planned to recommend that Westinghouse ratios would be periodically compared to the benchmarked companies and that the results of these comparisons would be provided to senior Westinghouse management officials for their information.

The implementation of the ratios recommended by Westinghouse management would result in a significant reduction in the number of Westinghouse managers. We estimate that the application of such ratios would result in the elimination of about 1,206 managers, with annual savings of about $82 million (See appendix for details). Additional reductions in the number of managers should be possible through the elimination of layers of management.

Procurement Functions

Westinghouse had a higher number of employees performing procurement functions in relation to the number employed in similar functions by two other management and operating contractors. Although differences existed in the organization and operating policies of these procurement organizations, we believe that our review of procurement statistics indicated a need for Westinghouse to improve the productivity of its procurement organization.

We analyzed the productivity of the Westinghouse procurement Division by comparing its performance statistics and assigned personnel with those of the Energy Systems and EG&G procurement organizations. Our analysis disclosed that, in Fiscal Year 1992, both Energy Systems and EG&G had processed more procurement actions per employee, in terms of number of actions and dollar value, than did the Westinghouse procurement staff. As shown in Table 6, the greatest differences in productivity existed between Energy Systems and Westinghouse.

Table 6

Fiscal Year 1992 Procurement Statistics
(Excluding Construction Activities)

	Procurement Staff	Number of Purchase Actions	Dollar Value Purchases (millions)
Westinghouse	274	63,608	$686
Energy Systems	182	279,622	600
EG&G	96	50,222	233

We also analyzed trends in procurement dollars and staffing for Energy Systems and Westinghouse (we did not analyze similar trends for EG&G). In recent years, Energy Systems had experienced a 100-percent increase in the dollar value of procurements but was still able to reduce its procurement staff by 36 percent. In contrast, Westinghouse had experienced a 44-percent decline in procurement dollars and a 15-percent decrease in purchase actions over a 2-year period ended September 30, 1992. Notwithstanding the reduction in procurement activity, Westinghouse had not decreased its procurement staff.

Two factors caused a significant part of the differences in productivity between Energy Systems and Westinghouse. These factors were the extent of automation, and the differences in procurement processes.

Energy Systems used an automated procurement system that significantly reduced the amount of time required by buyers to process individual purchase actions (EG&G used an automated system very similar to that used by Energy Systems). Energy Systems used an Accelerated Vendor Inventory Delivery system that significantly reduced the workload of buyers. These systems were used for the awarding of a subcontract for a class of materials with repetitive and high-volume requirements. The subcontractor agreed to provide materials at a set price over the duration of the subcontract (3 years with 2 option years) and to deliver the materials within a specified timeframe (for example, 24 hours). The contractor periodically prepared checks to cover the materials delivered under the subcontracts. After the

subcontract award, the buyer became invclved only if there was a return of an item or if a subcontractor requested a price change for an item(s) covered by the subcontract.

Energy Systems' accelerated system was designed to handle a high volume of purchases of low-cost materials. For example, in Fiscal Year 1992, Energy Systems used its system to process about 187,000 purchase actions that represented about 67 percent of total purchase actions processed by Energy Systems. However, the dollar amount of these purchases (about $48 million) accounted for only about 8 percent of the total dollar value of all purchases.

Westinghouse had a similar type of subcontract, referred to as a "master order agreement." However, it differed from the system used by Energy Systems with respect to the involvement of Westinghouse buyers. The Westinghouse buyers were involved in every request from a Westinghouse department for materials covered by a master order agreement. The Department submitted the request to the buyer, who then contacted the appropriate subcontractor and obtained a price for the requested material. If the buyer determined that the offered price was reasonable, the materials were ordered from the subcontractor. Further, for every 10th item ordered under a subcontract, the buyer had to obtain two to three price quotations from other vendors. The reason for obtaining such price quotations was to determine if the prices under the master order agreement were still competitive.

Differences existed in the procurement processes and practices between Energy Systems and Westinghouse, which also affected staffing requirements. For example, Energy Systems had a higher dollar threshold for competitive procurements, which reduced the amount of paperwork and manpower required to process procurement actions. In contrast, Westinghouse reviewed multiple prices to ensure cost reasonableness for smaller dollar procurements.

Based on our comparison of performance data for Energy Systems and Westinghouse, we estimated that Westinghouse could eliminate up to 22 employees if EG&G was used as a benchmark organization and up to 149 procurement employees if it attained the same level of productivity as Energy Systems. Management did not agree with these estimates and contended that the differences between the procurement organizations and procurement documentation were of such a magnitude as to preclude their use as benchmark organizations. That is, the use of performance data for EG&G and Energy Systems would not result in reasonable or supportable projections of staffing requirements for

Westinghouse procurement. However, management did agree that increased automation, revised procurement policies, and application of yet to be identified benchmarks should enable Westinghouse to reduce staffing. Further, management indicated that Westinghouse had reduced its procurement staff below the number of employees used for the audit comparisons.

Safety Staff Meetings

A significant number of productive labor hours were lost because of the excessive length of safety meetings by some maintenance shops. We estimated that 79 staff years of productive labor could be realized if safety meetings were limited to a reasonable length of time.

Many companies have policies that provide for periodic safety meetings for maintenance employees. The primary purpose of the meetings is to discuss safety issues. However, other matters discussed at this meetings may include work assignments, lessons learned, and company announcements. Another management and operating contractor held daily staff meetings of 5 to 10 minutes duration. A major chemical company conducted 1-hour safety meetings once a month.

Du Pont, the prior management and operating contractor at Savannah River Site, had initiated the practice of daily safety meetings for maintenance employees. A 1987 Du Pont document stated that:

> At the start of each day, meetings will be conducted daily by each first line supervisor. The meeting should last approximately 10 minutes and should include pertinent safety items related to the day's work.

The document also stated that the meetings should include discussions of other timely information such as plant announcements.

Some Westinghouse maintenance workers devoted up to 60 minutes each work day for "safety" meetings without any determination by Westinghouse management as to whether such meetings were cost effective and beneficial. Furthermore, inconsistencies existed between Westinghouse operating divisions as to the frequency and length of such meetings.

Inconwistencies existed in the practices of individual Westinghouse departments and branches with respect to the safety staff meetings. Some Westinghouse departments continued to hold

daily meetings, while other departments decided to hold weekly meetings. The length of the daily meetings ranged from 10 to 60 minutes. Our review of practices for 4,700 maintenance and construction workers disclosed that about 1,700, or 36 percent, attended daily meetings. The remaining 3,000 workers attended weekly staff meetings of from 30 to 60 minutes in duration.

The differences in safety meeting practices also lead to various operational problems. For example, some Westinghouse work teams were composed of employees from various Westinghouse departments. When the staffing practices of the departments providing team members differed, this could lead to nonproductive time. Delays were encountered because the team could not start work until the last member showed up from a safety meeting.

These inconsistencies existed because Westinghouse had not issued any formal policy guidance on the purpose or duration of periodic safety meetings. Neither had Westinghouse evaluated the need for or benefits realized from safety meetings of varying duration and frequencies. If some of the organizational components of Westinghouse were able to hold safety meetings weekly without adversely affecting their safety records, we question the need for other Westinghouse components to continue the practice of daily staff meetings of up to 1 hour in duration.

If the safety meetings for the estimated 1,700 maintenance workers were changed to weekly meetings, we estimate that Westinghouse would realize 79 more staff years of productive labor, with average salary and benefits savings of about $4 million. This estimate is based on weekly staff meetings of 45 minutes, which is longer than the time scheduled for the majority of Westinghouse employees now attending weekly meetings.

ABSENCE OF DEFINITIVE POLICY GUIDANCE

The fundamental cause of the conditions cited in this finding was the lack of definitive and mandatory Department policy guidance on factors to be considered by management and operating contractors in determining staffing requirements. That is, the Department had not developed any definitive guidance on the criteria or factors that must be considered by management and operating contractors in developing its staffing requirements. Neither had the Department required management and operating contractors to fully justify or provide detailed and objective

support for existing or planned staffing levels. Although a significant body of documented and accredited staffing standards exists in the private and public sectors, the Department had not required management and operating contractors to use or consider these performance standards in determining their staffing needs.

Also, Westinghouse had not implemented any criteria or policies to require that staffing needs be developed or justified on the basis of performance standards from other Federal agencies, contractors, private companies, or industries. While Westinghouse had undertaken some initiatives in this area, none of the initiatives had been fully pursued.

In the absence of a definitive and objective criteria for determining staffing needs, neither the Department nor Westinghouse had a rational basis for evaluating the reasonableness and propriety of staffing levels set forth in programming guidance and annual operating plans. Without the application of standards or benchmarks, Departmental Headquarters and the Operations Office had attempted to control staffing levels at Savannah River Site by establishing arbitrary personnel ceilings. Such actions do not ensure that staffing reductions by Westinghouse were cost effective, and they contributed to improved efficiencies in the management and operations of Savannah River Site facilities.

OPPORTUNITIES FOR REDUCTIONS IN STAFFING AND OPERATING EXPENSES

Westinghouse's implementation of higher performance standards, such as engineered time standards, industry standards, and best practices of other companies, would enable it to realize significant reductions in staffing requirements and related operating expenses. For two of the areas covered in the audit, construction standards and best practices, we estimate staffing reductions of over 1,800 personnel and savings of salaries and benefits of about $399 million over 5 years. Table 7 shows a breakout of the potential staffing and cost savings.

Table 7

Summary of Potential Staffing Reductions and Cost Savings

	Staff Reductions	Cost Savings (in millions)
Industry/Federal Agency Standards		
Construction Tasks	348	$ 75
Engineering Design	35	15
Best Practices		
Span of Management	1,206	246
Procurement	149	43
Safety Meetings	79	20
Totals	1,817	$399

Additional staffing reductions were possible in the maintenance and fabrication shops through the application of engineered time standards. But we were unable to estimate, with a high level of confidence, the total number of positions that could be eliminated. This was because of insufficient planning and performance data for the maintenance and fabrication functions.

Nevertheless, the actual staffing reductions realized by Westinghouse from the implementation of the recommendations in this report will be heavily influenced by two factors. These are: the manner in which Westinghouse implements the report recommendations and the subsequent levels of proficiency attained by the Westinghouse workforce.

2. Controls Over Contractor Staffing Levels.

FINDING

The Operations Office needs complete and accurate feedback on staffing levels from Westinghouse to effectively administer the Westinghouse contract. However, Westinghouse significantly understated its actual staffing levels in periodic reports to the Operations Office. This condition existed because the guidance issued by the Operations Office on the periodic staffing reports was unclear or incomplete. As a result, Westinghouse had applied about 1,765 more personnel to the accomplishment of contract requirements than the Operations Office was aware of. Also by not accounting for all personnel resources the contractor was provided with an opportunity to circumvent or avoid a Department-imposed staffing ceiling.

RECOMMENDATIONS

We recommend that the Manager, Savannah River Operations Office, require Westinghouse to include in its monthly staffing reports to the Operations Office the full-time equivalents for employees of fixed-price subcontractors and Westinghouse employees working overtime to fulfill normal work requirements.

MANAGEMENT REACTION

The Manager agreed with the recommendation and stated that the Operations Office is working with Westinghouse to make the necessary changes to the monthly report.

DETAILS OF FINDING

BACKGROUND

Until 1991, the Department did not attempt to place controls over staffing levels of management and operating contractors at the Savannah River Site. In May 1991, Departmental Headquarters directed the Operations Office to submit monthly reports on staffing levels of the management and operating contractors and to develop a plan to reduce site staffing. In addition to Westinghouse, the other two management and operating contractors

at the Savannah River Site were Wackenhut Services, Inc., for security services and the University of Georgia Research Foundation for operating the Savannah River Ecology Laboratory.

The Department did not establish any limits on contractor staffing for calendar year 1992. However, during calendar year 1992, Westinghouse's staffing increased from 21,674 on January 1, 1992, to 22,114 at December 31, 1992. Because of increases in contractor staffing and anticipated future budget reductions, Departmental Headquarters, in its Fiscal Year 1993 program execution guidance, set a staffing goal of 21,850 full-time equivalents for the three management and operating contractors and their subcontractors in Fiscal Year 1993.

CONTRACTOR REPORTING OF STAFFING LEVELS

For the Operations Office to effectively administer the Westinghouse contract, it needs complete and timely reports from Westinghouse on staffing levels. The Operations Office is responsible for administering the Westinghouse contract, and this administration includes assessing the adequacy of resources applied by Westinghouse to the performance of contract requirements. Also, the Operations Office needs periodic status reporting from Westinghouse on staffing levels to determine the extent of Westinghouse's compliance with Department-imposed staffing targets and other staffing related guidance set forth in annual Department plans covering Westinghouse activities.

WESTINGHOUSE REPORTS UNDERSTATED ACTUAL STAFFING

Westinghouse significantly understated its actual staffing levels in periodic reports to the Operations Office. Specifically, Westinghouse's monthly staffing reports did not include full-time equivalents for (1) fixed-price subcontractor employees, or (2) Westinghouse employees working overtime to fulfill normal work requirements.

Fixed-price Subcontracts

Westinghouse had not included full-time equivalents for subcontractor employees working on fixed-price subcontracts in its monthly staffing reports to the Operations Office. Departmental program execution guidance for Fiscal Year 1993 required management and operating contractors to include full-time equivalents for all contractor and subcontractor employees. Westinghouse reported full-time equivalents for

subcontractor employees assigned to cost-type subcontracts, but did not report full-time equivalents for fixed-price service and construction subcontracts.

An example of a fixed-price subcontract used to augment the staffing needs of Westinghouse involved grass-cutting work. In 1992 Westinghouse used temporary employees for grass-cutting, and the temporary employees were included in monthly staffing reports. In Fiscal Year 1993, the Westinghouse department responsible for grass-cutting had a reduction in staffing, and Westinghouse awarded a fixed-price subcontract for grass-cutting that involved about 34 staff years.

Another example involved a fixed-price subcontract awarded on May 29, 1992, to write procedures and train personnel over a 3-year period. The subcontractor's proposal showed that 158 staff-years would be provided, but the employees on these fixed-price subcontracts were not included in Westinghouse's monthly staffing reports.

Employees Performing Overtime Work

Westinghouse used overtime to augment its work force but did not include overtime work in its monthly staffing reports. That is, Westinghouse used overtime in lieu of hiring additional staff. Some requests for overtime showed that the time was for "staff augmentation," while other requests showed other reasons. For example, a request for six employees to work 50 hours a week for 2 months on the basis that the overtime work was required to "address a growing backlog of essential....activities which can not be fulfilled with existing personnel in a timely fashion."

REASONS FOR UNDERSTATEMENT OF STAFFING LEVELS

This condition existed because the Operations Office had not issued definitive guidance that required Westinghouse to report employees working on fixed-price subcontracts and because it had not formed a position on the reporting of augmentation overtime. The Operations Office had intended that management and operating contractors' monthly staffing reports include all subcontractor employees performing work on-site at the Savannah River Site that could be performed by contractor employees. This intention applied to both cost-plus and fixed-price subcontracts. However, the Operations Office had not issued guidance that specifically cited fixed-price subcontracts. In the absence of definitive

guidance, Westinghouse decided that fixed-price subcontracts should be excluded from monthly staffing reports because Westinghouse had no control over the number of employees assigned to work on such subcontracts.

With regard to augmentation overtime, the Operations Office had not determined if augmentation overtime should be included in monthly staffing reports. In our opinion, no real difference exists between fixed-price subcontracts and overtime when the objective is to augment the contractor's workforce.

IMPACT OF EXCESS STAFFING

By not including the full-time equivalents applicable to fixed-price subcontracts and augmentation overtime, Westinghouse staffing reports understated by about 1,765 full-time equivalents the total resources being applied to the accomplishment of contractual requirements. Of the 1,765 full-time equivalents, 1,090 applied to fixed-price subcontracts, and 675 applied to augmentation overtime. The estimates were based on data for Fiscal Year 1992. Information available at the time of our audit indicated that a similar level of activity was anticipated for Fiscal Year 1993. We considered all overtime hours in excess of Westinghouse's annual goal of 5 percent to be augmentation work. Westinghouse had established the 5-percent goal as a reasonable amount of overtime required for normal operations.

Moreover, the exclusion of categories of personnel resources from staffing reports provided Westinghouse with the ability to circumvent staffing ceilings established by the Department. That is, Westinghouse could use fixed-price subcontracts and augmentation overtime to compensate for Department-directed staffing reductions in the Westinghouse or cost-plus subcontractor workforce. Under such circumstances, Westinghouse could apply resources to the contract in excess of that considered necessary by the Department for the effective accomplishment of mission requirements.

PART III

MANAGEMENT AND AUDITOR COMMENTS

The Manager, Savannah River Operations Office, concurred with the recommendations and indicated that appropriate corrective actions were underway or planned for each of the recommendations in this report. The corrective actions are responsive to the intent of the recommendations. However, the Manager did not agree with the audit estimate of potential staffing reductions for the procurement function. We still believe that our estimate is conservative and attainable if Westinghouse fully implements the corrective actions recommended in this report.

The Manager's comments on the recommendations follows.

1. Inefficient Staffing Practices.

Recommendation. We recommend that the Manager, Savannah River Operations Office, issue policy guidance and incorporate such policy guidance in future contracts to require management and operating contractors at the Savannah River Site to use industry and Federal Government performance standards and industry benchmarks in determining and justifying their staffing requirements.

Management Comments. The Manager stated that the Savannah River Operations Office will issue appropriate policy guidance to the management and operating contractors.

Recommendation 1. We recommend that the Manager, Savannah River Operations Office, require Westinghouse to apply engineered time standards for development of labor estimates for individual work orders and the staffing of maintenance and fabrication functions.

Management Comments. The Manager concurred with the recommendation.

Recommendation 2. We recommend that the Manager, Savannah River Operations Office, require Westinghouse to use industry standards to develop cost estimates for conventional-type construction projects.

Management Comments. The Manager stated that Westinghouse will be required to use such standards, modifying local standards to incorporate the factors where site costs are legitimately higher than the private and Federal sectors.

Recommendation 3. We recommend that the Manager, Savannah River Operations Office, require Westinghouse to institute controls to ensure that the cost of engineering design work falls within industry or Federal Government standards for such work.

Management Comments. Management concurred with the recommendation.

Recommendation 4. We recommend that the Manager, Savannah River Operations Office, require Westinghouse to develop and implement plans with realistic milestone dates, to increase the ratio of subordinate employees to managers and reduce the levels of management.

Management Comments. The Manager agreed that the number of managers and levels of management at Westinghouse can be reduced. As a part of its current reduction in force effort and overall restructuring plan, Westinghouse will address span of control. The Savannah River Operations Office will continue to monitor this area in the future to ensure additional actions, as necessary, are taken.

Recommendation 5. We recommend that the Manager, Savannah River Operations Office, require Westinghouse to develop actions to improve the productivity of the Procurement Division, including the use of appropriate benchmarks.

Management Comments. The Manager concurred with the recommendation and indicated that appropriate actions would be taken to increase automation, revise procurement policies, and apply benchmarks where appropriate.

Recommendation 6. We recommend that the Manager, Savannah River Operations Office, require Westinghouse to issue definitive policy guidance on the purpose of safety meetings and criteria as to the frequency and duration of such meetings.

Management Comments. The Manager stated that the Savannah River Operations Office will ensure that Westinghouse issues definitive policy guidance on the purpose of safety meetings and takes appropriate action to limit the frequency and duration of such meetings.

2. Controls Over Contractor Staffing Levels.

Recommendation. We recommend that the Manager, Savannah River Operations Office, require Westinghouse to include in its monthly staffing reports to the Operations Office the full-time equivalents for employees of fixed-price subcontractors and Westinghouse employees working augmentation overtime.

Management Comments. The Manager agreed that the monthly staff reports should adequately reflect all appropriate subcontractors as well as Westinghouse and Bechtel Savannah River, Inc. employees. The Savannah River Operations Office was working with Westinghouse to make necessary changes to the monthly report.

APPENDIX

NUMBER OF EXCESS MANAGERS BASED ON RECOMMENDATIONS OF SENIOR WESTINGHOUSE MANAGEMENT OFFICIALS

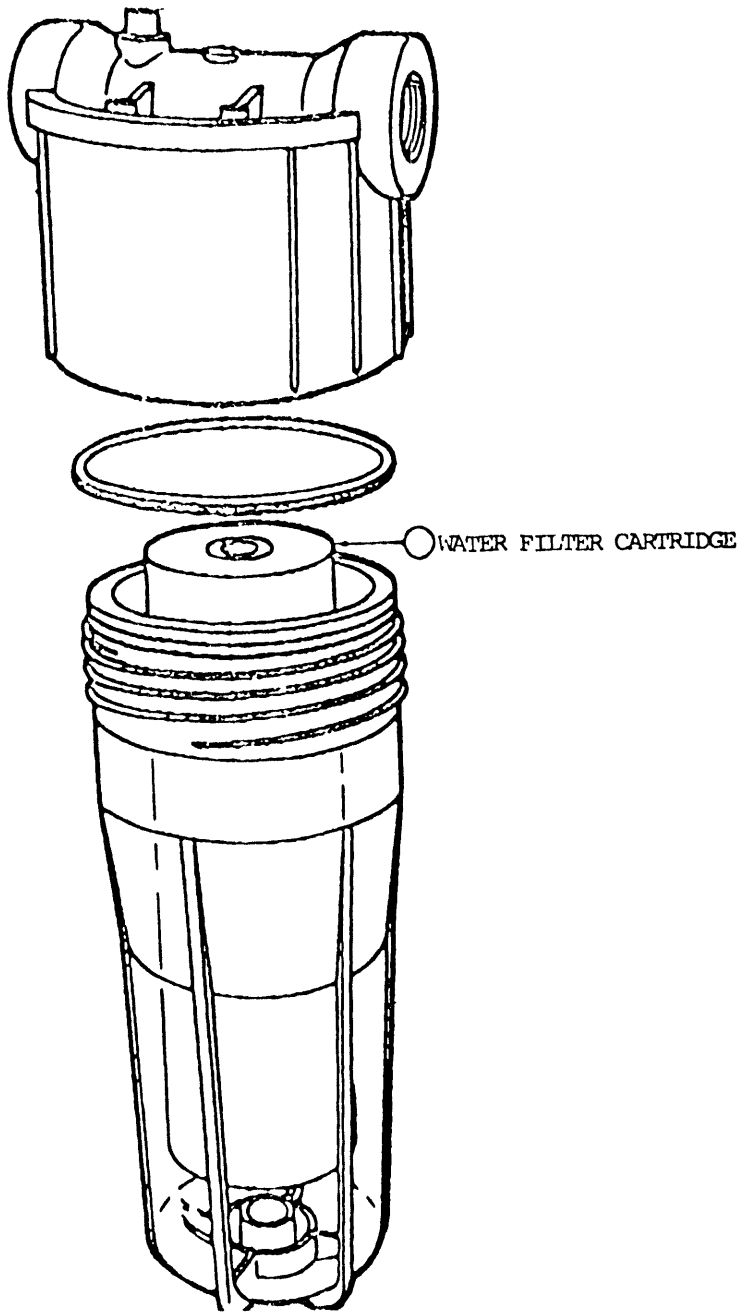
Labor Categories	No. of Managers @	Westinghouse Management Recommend	Excess Managers	Annual Cost # ($000)
Managers	530	1:07	295	$ 24,851
Engineers/Scientist	485	1:10	24	2,218
Administrative/ Professional	259	1:10	(15)	(1,123)
Technical	245	1:13	118	6,581
Clerical	491	1:15	314	19,716
Operators	989	1:10	401	25,179
Laborers	89	1:20	69	4,333
Totals	3,088	1:9.5	1,206	$ 81,755

Note: @ Westinghouse study group had not reconciled the data on the number of managers. At the time of our audit, current estimates of managers ranged from 3,088 to 4,120. To be conservative, we used the lower estimate for our computation of excess managers.

Includes average salaries for each labor category and applicable fringe benefits.

EXHIBIT

ILLUSTRATION OF WATER FILTER



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