

**OPERATION AND MAINTENANCE OF PLANT**

**CALIFORNIA STATE UNIVERSITY,  
LOS ANGELES**

**Report Number 99-43  
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## **ABBREVIATIONS**

BA	Business Affairs – Office of the Chancellor
BP	Budget Planning – Office of the Chancellor
CPDC	Capital Planning, Design & Construction (previously PPD)
CSU	California State University
CSULA	California State University, Los Angeles
MMS	Maintenance Management System
OMP	Operation and Maintenance of Plant
PM	Preventive Maintenance
RA	Resolution of the Committee on Audit – CSU Board of Trustees
SAM	State Administrative Manual
SUAM	State University Administrative Manual
UAS	University Auxiliary Services

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## INTRODUCTION

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### PURPOSE

Our overall audit objective was to ascertain the effectiveness of policies and procedures related to the administration of the Operation and Maintenance of Plant (OMP) and to ensure that controls addressing current and future facility requirements are in place.

Within the overall audit objective, specific goals included determining whether:

- ▶ the administration and management of the OMP program and facilities planning functions provide clear lines of organizational authority and responsibility;
- ▶ budgeting procedures adequately address OMP funding, ensure that one-time funding allocations are used for their designated purpose, and include procedures to monitor budget versus actual expenses;
- ▶ a comprehensive program is in place that identifies all maintenance/repair requirements including preventive maintenance, facility repairs, deferred maintenance, custodial services, and grounds keeping;
- ▶ the maintenance/repair program includes productivity/performance standards, quality control and employee training to ensure that quality work is performed effectively and efficiently;
- ▶ administrative controls over the maintenance/repair program are adequate, and the maintenance management system includes work order scheduling, costing and control; backlog reports; and productivity tools;
- ▶ non-maintenance work is adequately controlled and fully charged back to the customer in accordance with CSU directives;
- ▶ all non-general fund operations and chargeable costs have been identified in accordance with CSU directives and are fully charged back to the operations;
- ▶ chargebacks are adequately controlled and properly valued;
- ▶ maintenance materials, supplies, and equipment are adequately controlled and properly accounted for;
- ▶ a utilities management program has been established in accordance with CSU policy; and
- ▶ the campus physical master plan is maintained in accordance with CSU policy.

## SCOPE AND METHODOLOGY

This review emphasized but was not limited to compliance with state laws, Board of Trustee policies, and Office of the Chancellor and campus policies, letters and directives. June 1998 to date was the primary period of review.

Our primary focus involved the internal administrative and accounting controls over the operation and maintenance of plant functions. Specifically, we reviewed and tested:

- ▶ budget allocation and monitoring procedures;
- ▶ identification of maintenance/repair requirements;
- ▶ work order processing and completion of preventive maintenance tasks;
- ▶ procedures for controlling custodial services and grounds keeping;
- ▶ procedures for controlling and processing chargebacks for non-maintenance work and costs associated with non-general fund operations;
- ▶ procedures for controlling and accounting for maintenance materials, supplies and equipment;
- ▶ implementation of a utilities management program; and
- ▶ maintenance of the campus physical master plan.

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## BACKGROUND

In response to the systemwide risk assessment conducted during 1996, which included input from officers representing the Chancellor's Office and each CSU campus, the Board of Trustees directed this review of Operation and Maintenance of Plant at its January 1999 meeting.

The Legislative Analyst's Report on the 1979/80 budget addressed the need to protect the substantial public investment represented by CSU facilities, and the Legislature subsequently directed the CSU to implement a preventive maintenance program on each campus. In December 1979, a CSU Task Force on Plant Maintenance was appointed to explore preventive maintenance needs for the system and concluded that the concept of preventive maintenance was too narrow in scope to accommodate the total maintenance needs of the CSU. Consequently, a concept of "Planned/Programmed Maintenance" was proposed, incorporating preventive maintenance as well as systematic planning and programming. The CSU Executive Council reviewed the task force report and approved the concept in March 1981.

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## INTRODUCTION

In April 1981, Executive Order No. 343, *Establishment of Planned/Programmed Maintenance*, was issued. It stated that “effective immediately, each campus shall initiate a Planned/Programmed Maintenance Management system that will provide systematic maintenance of State owned campus facilities, program future special maintenance and repair project requirements, identify deferred maintenance needs, and schedule replacement of Group I equipment.”

In 1983, the Office of the University Auditor reviewed *Plant Operations* at eight campuses and issued a systemwide report. The Board of Trustees subsequently accepted the systemwide report and addressed nine implementing actions in Trustees’ resolution RA 9-83-057. These actions were adopted in CSU directive BA 84-25, *Implementation of Trustees’ Resolution RA 9-83-057 (Plant Operations)*, dated July 25, 1984.

Throughout this report, we will refer to the program as operation and maintenance of plant (OMP). The titles of the departments assigned responsibility for managing CSU campus operation and maintenance of plant include, among others, physical plant and plant operations. At California State University, Los Angeles, the Facilities Services Office manages the OMP program.

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## OPINION

We visited the California State University, Los Angeles campus from October 25, 1999, through December 3, 1999, and audited the procedures in effect at that time.

In our opinion, the administration and management of the OMP program provided clear lines of organizational responsibility, and budget-monitoring procedures were effective. Areas requiring improvement are referenced in the executive summary.

## **EXECUTIVE SUMMARY**

The purpose of this section is to provide management with an overview of conditions requiring their attention. Areas of review not mentioned in this section were found to be satisfactory. Numbers in brackets [ ] refer to page numbers in the report.

### **MAINTENANCE MANAGEMENT PROGRAM [6]**

#### **PREVENTIVE MAINTENANCE [6]**

Implementation and administrative controls over the preventive maintenance (PM) program were not adequate. A fully operational preventive maintenance program, with comprehensive work tasks and accurate administrative reporting, ensures effective and efficient PM scheduling and coverage for campus equipment and facilities.

#### **PROGRAM ADMINISTRATION [7]**

Oversight over the work order program was not adequate. Maintaining adequate oversight ensures that maintenance and repairs are performed timely, which decreases the risk of system breakdowns.

#### **QUALITY CONTROL [7]**

A comprehensive quality control program had not been implemented. Implementation of such a program decreases the risk of system breakdowns and deterioration of facilities and grounds and helps to ensure that work is performed in accordance with established standards.

### **CHARGEBACKS AND NON-MAINTENANCE WORK [8]**

#### **CHARGEBACK CONTROLS [8]**

Procedures regarding reimbursement (chargebacks) to Facilities Services for services rendered were unsatisfactory. Improving chargeback controls increases the likelihood for timely and complete reimbursement to facilities services for services rendered.

#### **NON-GENERAL FUND ACTIVITIES [10]**

Services provided to non-general fund activities were not always charged back or charged back in a timely manner. Prompt billing of all services provided to non-general fund activities increases the likelihood of complete and timely reimbursement.

## **MAINTENANCE MATERIALS AND EQUIPMENT [11]**

### **MAINTENANCE MATERIALS AND SUPPLIES INVENTORY [11]**

Maintenance materials and supplies inventory procedures were not adequate. Strengthening inventory controls decreases the risk of lost or stolen assets and could result in lower overall inventory costs.

### **SMALL HAND TOOLS AND EQUIPMENT [12]**

Accountability over small hand tools and equipment required improvement. Proper accountability decreases the risk of lost or stolen assets.

## **UTILITIES MANAGEMENT [12]**

The campus utilities management program was in need of improvement. Improving the utilities management program may result in increased energy efficiency.

## **PHYSICAL MASTER PLAN [14]**

A thorough reevaluation of the campus physical master plan had not been performed since January 1985. Timely reviews of the campus physical master plan will ensure that facilities meet current and future needs.

## **ADMINISTRATION AND BUDGETARY CONTROLS [14]**

Facilities services had not been able to review department expense data since July 1999. Timely reviews of financial information improves management effectiveness, operational efficiency and expense control.

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## OBSERVATIONS, RECOMMENDATIONS, AND CAMPUS RESPONSES

### MAINTENANCE MANAGEMENT PROGRAM

#### PREVENTIVE MAINTENANCE

Implementation and administrative controls over the preventive maintenance (PM) program were not adequate.

Facilities Services had not regularly maintained and processed PM activity through the Maintenance Management System (MMS) since 1993. In addition, Facilities Services management stated that PM had been performed infrequently in FY 1998-99; they were unable to provide corresponding data for verification of the work performed; and preventive maintenance work schedules and detailed work tasks had not been entered into the MMS or verified for all crafts.

Executive Order #343, *Establishment of Planned/Programmed Maintenance*, dated April 29, 1988, states that each management system shall incorporate a current, comprehensive schedule for all maintenance work to be accomplished in a timely manner.

CSU directive BA 84-25, *Implementation of Trustees' Resolution RA 9-83-057*, dated July 25, 1984, states that a work order system that reasonably accounts for all resources within plant operations will be implemented on each campus.

SAM §20003 states that a satisfactory system of internal administrative control shall include an established system of practices to be followed in the performance of duties and functions as well as an effective system of internal review.

The facilities services director stated that a lack of staff resources along with the task of converting to the new work control system caused some administrative reporting and scheduling problems.

Failure to ensure that all PM work is properly entered into the MMS system and completed in a timely manner increases the risk of ineffective and inefficient PM scheduling and inadequate coverage for campus equipment and facilities that may result in system breakdowns.

#### **Recommendation 1**

We recommend that the campus complete development and implementation of the MMS preventive maintenance program, including PM scheduling and detailed work tasks.

#### **Campus Response**

The MMS system has been implemented. The process to populate the system with equipment data and maintenance requirements will be completed by July 2000.

## **PROGRAM ADMINISTRATION**

Oversight over the work order program was not adequate.

As of October 20, 1999, the Maintenance Management System (MMS) showed 2,504 open maintenance work orders including 1,547 (62%) over four months old that should have been closed.

Executive Order #343, *Establishment of Planned/Programmed Maintenance*, dated April 29, 1988, states that each management system shall incorporate a current, comprehensive schedule for all maintenance work to be accomplished in a timely manner.

SAM §20003 states that a satisfactory system of internal administrative control shall include an established system of practices to be followed in the performance of duties and functions as well as an effective system of internal review.

The facilities services director stated that the work control staffing level combined with the conversion to new MMS Plus system affected work order closure.

Less than adequate oversight over the work order program increases the risk that maintenance and repairs will not be performed on a timely basis and system breakdowns will occur.

### **Recommendation 2**

We recommend that the campus establish procedures to monitor the status and age of work orders and ensure that completed work orders are promptly closed.

### **Campus Response**

Procedure updates have been implemented. The work orders database has been updated with the current outstanding work orders. Beginning in March 2000, monthly reports will be distributed to Facility supervisors to monitor and track the status of open work orders.

## **QUALITY CONTROL**

A comprehensive quality control program had not been implemented.

Quality control checks were informal and not routinely documented. In addition, custodial and grounds keeping inspections were not documented, and grounds keeping assignment/scheduling procedures were not formalized.

Executive Order #343, *Establishment of Planned/Programmed Maintenance*, dated April 29, 1988, requires that the maintenance management program include a procedure that will provide management with a means to measure the effectiveness of planned/programmed maintenance.

SAM §20003 states that a satisfactory system of internal administrative control shall include an established system of practices to be followed in the performance of duties and functions as well as an effective system of internal review.

The facilities services director indicated that, except for major projects, inspections were performed informally. The custodial services manager stated that inspections were formally documented in association with employee complaints. The grounds manager stated that he was waiting to include formal scheduling into the new MMS Plus system.

Inadequate quality control/inspection and assignment/scheduling procedures increase the risk that work will not be performed in accordance with established procedures and could result in deterioration of facilities and grounds.

### **Recommendation 3**

We recommend that the campus establish and implement formalized quality control and grounds keeping assignment/scheduling procedures to ensure compliance with facilities services work standards.

### **Campus Response**

Procedure updates have been implemented. A quality control checklist has been developed. Beginning in April 2000, the Director of Facility Services will randomly select two areas per month for review. Using the checklist, the Director of Facility Services or his designee will perform the review.

## **CHARGEBACKS AND NON-MAINTENANCE WORK**

### **CHARGEBACK CONTROLS**

Procedures regarding reimbursement (chargebacks) to Facilities Services for services rendered were unsatisfactory. We found that:

- ▶ that labor was not properly charged back to departments in 14 of 34 instances reviewed (41%);
- ▶ supporting documentation could not be provided to substantiate the 22-25% overhead rate; and
- ▶ staff benefits were not included in for chargebacks to non-general fund activities.

CSU systemwide directive BA 84-25, *Implementation of Trustees' Resolution RA 9-83-057*, dated July 25, 1984, states that each campus will develop a chargeback system, and campus policy and procedures must ensure the return of all costs to the plant operations budget. Additionally, the policy should include reimbursement for overhead that would normally be calculated as a percentage of total costs.

CSU systemwide directive BP 86-69, *Staff Benefits – Billing Rates for Services of General Fund Employees*, dated September 29, 1986, states that billings for services of general fund employees should include staff benefit-type charges in accordance with SAM §8740, and campuses will be responsible for the derivation of benefit rates applicable to their campus.

SAM §8740 establishes the formula for determining hourly rates for the billing of services of employees paid on a monthly basis.

SAM §8752 indicates that departments must recover full costs whenever goods or services are provided to others.

SAM §20003 states that a satisfactory system of internal accounting and administrative control shall include a system of record keeping procedures adequate to provide effective accounting control over assets, liabilities, revenues, and expenditures.

The facilities services director stated that the maintenance management system required updates to be input manually, which did not always occur. He further stated that the current overhead rate was established years ago and had not been adjusted since that time. Additionally, he was not aware that staff benefits were not being charged to non-general fund activities.

Unsatisfactory controls over chargebacks increase the risk of inaccurate and incomplete reimbursement to facilities services for services rendered and reduce funds available for campus maintenance and repairs.

#### **Recommendation 4**

We recommend that the campus:

- a. strengthen procedures to ensure that current labor rates are used for chargebacks;
- b. substantiate the validity of the overhead rates; and
- c. strengthen procedures to include staff benefits for chargebacks to non-general fund activities.

#### **Campus Response**

The recommendation has been initiated. A consultant will be hired to assess and update the current charge-back procedures. This will include labor, overhead, and staff benefit charge-back rates. This task will be completed by July 2000.

## **NON-GENERAL FUND ACTIVITIES**

Services provided to non-general fund activities were not always charged back/charged back in a timely manner.

University Auxiliary Services (UAS) was not invoiced until June 1999 for utility services provided during FY 1998-99; and UAS-Child Care was not being charged for routine custodial and maintenance services.

CSU systemwide directive BA 84-25, Implementation of Trustees Resolution RA 9-83-057, dated July 25, 1984, states that each campus will develop a chargeback system, and campus policy and procedures must ensure the return of all costs to the plant operations budget.

CSU systemwide directive BA 83-30, Policy on Chargeable Services to Self-Supporting Operations, dated December 28, 1983, states that funds provided from the general fund may be used to provide support for ancillary operations that are not funded through the general fund if there is recovery of the cost of such support.

SAM §8752 states that state policy requires departments to recover full costs whenever goods or services are provided to others.

SAM §8776.3 requires invoices to be prepared as soon as possible after recognition of a claim.

The facilities services director stated that a formal arrangement had been established between the UAS and his department for the annual payment of utilities. He further stated that since the building that houses the child-care activity is state-owned, his department has always maintained it.

Failure to properly invoice non-general fund activities for services rendered by facilities services reduces the likelihood for complete and timely reimbursement and the amount of working capital available for maintenance and repairs.

### **Recommendation 5**

We recommend that the campus take the necessary action to ensure that all charges for services rendered to non-general fund activities by facilities services are billed in a timely manner.

### **Campus Response**

The recommendation has been implemented. Beginning in April 2000, University Auxiliary Services and UAS-Child Care will be billed monthly.

## MAINTENANCE MATERIALS AND EQUIPMENT

### MAINTENANCE MATERIALS AND SUPPLIES INVENTORY

Maintenance materials and supplies inventory procedures were not adequate.

A complete physical inventory including reconciliation to perpetual records had not been conducted, and formalized policies and procedures had not been developed for effective materials management.

SAM §3535 requires state agencies to maintain unit stock records and conduct physical inventories if they operate warehouses with gross floor space exceeding 4,000 sq. ft., average annual inventory investment in expendable goods exceeding \$50,000, annual issues of expendable goods exceeding \$100,000 or expendable goods inventory consisting of 400 or more stock items. In addition, each state agency must develop internal policies and procedures for effective materials management within each organizational unit that maintains continuing inventories of expendable goods.

CSU systemwide directive BA 84-25, *Implementation of Trustees' Resolution RA 9-83-057*, dated July 25, 1984, states that internal controls over the purchase, storage and use of plant operations department materials be developed and implemented at the campuses.

SAM §20003 states that a satisfactory system of internal accounting and administrative control shall include segregation of duties appropriate for proper safeguarding of state agency assets and a system of record keeping procedures adequate to provide effective accounting control over assets, liabilities, revenues, and expenditures.

The facilities services director stated that, while he did not always have staff available to perform physical inventory counts, an inventory clerk was recently hired to begin this process.

Inadequate inventory controls increase the risk of lost or stolen assets and lead to higher overall inventory costs.

#### **Recommendation 6**

We recommend that the campus:

- a. strengthen procedures to ensure that a physical inventory, including reconciliation to perpetual records, is performed on an annual basis; and
- b. develop formalized internal policies and procedures for effective materials management.

### **Campus Response**

Procedure updates have been implemented. A physical inventory and reconciliation has been completed. Formal (written) policies and procedures for materials management including annual physical inventory and reconciliation have been implemented.

### **SMALL HAND TOOLS AND EQUIPMENT**

Accountability over small hand tools and equipment required improvement.

Check out procedures that ensure the timely return of small hand tools and equipment had not been established for all trade shops.

SAM §20003 states that a satisfactory system of internal accounting and administrative control shall include a system of recordkeeping procedures adequate to provide effective accounting control over assets, liabilities, revenues, and expenditures.

The facilities services director stated that the building services trade shop had the most small hand tools and equipment and utilized a check out log. He further stated that accountability had been assigned to the trade shop supervisors.

Inadequate accountability over small hand tools and equipment increases the risk of lost or stolen state property.

### **Recommendation 7**

We recommend that the campus strengthen procedures to ensure that small hand tools and equipment check out procedures are consistent for all trade shops.

### **Campus Response**

Procedure updates have been implemented. Beginning in April 2000, all trade shops will utilize a sign-in and sign-out procedure for small hand tools.

### **UTILITIES MANAGEMENT**

The campus utilities management program was in need of improvement.

We noted that:

- ▶ utilities management program procedures were informal and did not include all control requirements outlined in Executive Order No. 538;

- ▶ an annual five-year energy conservation and utilities management plan had not been developed; and
- ▶ Facilities Services was not completing and submitting energy consumption reports to Capital Planning, Design and Construction (CPDC) in a timely manner.

Executive Order No. 538, *Policy Statement on Energy Conservation and Utilities Management for the California State University and Energy Consumption Reduction Goal*, effective February 1, 1989, provides formal control requirements to monitor energy usage including the development, implementation, and updating of a campus-wide five-year Energy Conservation and Utilities Management Plan.

The facilities services director stated that completion of the utilities management program had not been given a high priority due, in part, to the new system conversion requirements. He further stated that untimely billing information from the utility company contributed to the late submissions of the energy consumption reports.

A less than satisfactory energy management program may result in decreased energy efficiency.

### **Recommendation 8**

We recommend that the campus:

- a. adopt formalized utility management program procedures;
- b. develop and implement a campus-wide five-year Energy Conservation and Utilities Management Plan; and
- c. submit monthly energy consumption reports to CPDC in a timely manner.

### **Campus Response**

Procedure updates have been implemented:

- a. Utility management procedures have been updated according to the control requirements outlined in Executive Order Number 538. The procedures include continuous review to seek opportunities to improve energy efficiency through renewal of equipment, modifications in operations, and renovation of utility systems.
- b. A five-year energy conservation and utilities management plan has been formally documented. The plan documents the efforts already in progress to improve efficiencies in energy usage. This includes continuous updating of boilers and lighting systems, modifications to HVAC systems, examining and revising facility operating hours.

- c. DWP has agreed to provide monthly statements to CSULA as timely as permitted by their billing cycle. Because of DWP's internal processing constraints, the monthly statements are not received by its customers for approximately 45 days. This has been communicated to CPDC. The monthly energy consumption reports are current through January 2000. Subsequent monthly energy consumption reports will be submitted to CPDC within 45 days of receipt of bill.

## PHYSICAL MASTER PLAN

A thorough reevaluation of the campus physical master plan had not been performed since May 1985.

PPD SUAM Section II §9009 states that periodically, but not less often than every three years, each campus shall accomplish a thorough reevaluation of all parts of the physical master plan and shall submit a written summary report of the reevaluation to Capital Planning, Design and Construction (CPDC).

The facilities planning and construction director stated that he was not aware of this requirement.

Failure to complete timely reviews of the campus physical master plan increases the risk that facilities will not meet current and future needs.

### **Recommendation 9**

We recommend that the campus obtain clarification from CPDC regarding the periodic physical master plan reevaluation requirement and comply as instructed.

### **Campus Response**

The recommendation has been initiated. An external architectural firm has been hired to review and update the campus physical master plan. The plan will be completed and submitted to CPDC by July 2000. Also, a representative from CPDC has been contacted and will participate in the update and review process. Thereafter, periodic reviews and updates will be conducted according to CPDC requirements.

## ADMINISTRATION AND BUDGETARY CONTROLS

Facilities Services had not been able to review department expense data since July 1999.

Facility services had not been given access to review on-line detailed expenditure data maintained in the recently implemented financial accounting system. In addition, no other management reports to monitor expenses have been issued to the department since July 1999.

SAM §20003 states that a satisfactory system of internal accounting and administrative control shall include a system of recordkeeping procedures adequate to provide effective accounting control over assets, liabilities, revenues, and expenditures.

The assistant vice president for administration and finance stated that the University was experiencing problems with its implementation of the financial information system/software and that this has delayed the availability of the on-line access and reports.

The lack of adequate financial information could result in management ineffectiveness, operational inefficiencies, and poor expense control.

**Recommendation 10**

We recommend that the campus provide to facility services monthly financial reports and/or on-line access to financial system data.

**Campus Response**

With the completion of the PeopleSoft Financial System implementation, financial reports for prior activities were released to all campus departments including Facility Services. Also, on-line capabilities to view financial data have been implemented. Beginning in April 2000, regular monthly financial reports to Facility Services will be distributed.

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## **APPENDIX A: PERSONNEL CONTACTED**

<b><u>Name</u></b>	<b><u>Title</u></b>
Dr. James M. Rosser	President
Patrick Bennett	Manager, Building Trades/Work Control
Judy Castenada	Administrative Analyst
Cheryl Carrillo	Materials Coordinator
Ronald Fangmeyer	Manager, Grounds
Steven Garcia	Vice President for Administration and Finance
Ali Izadian	Director Facilities Planning and Construction
Yuet Lee	Internal Auditor
Guadalupe Moreno	Associate Budget Analyst
Norman Morris	Manager, Custodial Services
Gary Murph	Assistant Vice President for Administration and Finance
Sri Renganathan	University Controller
Adriana Rodriguez	Administrative Support, Facilities Services
Henry Soto	Director, University Budget
Glenn Venner	Director of Facilities Services