

OPERATION AND MAINTENANCE OF PLANT

**CALIFORNIA STATE UNIVERSITY,
LONG BEACH**

**Report Number 99-42
December 14, 1999**

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ABBREVIATIONS

CPDC	Capital Planning, Design & Construction (previously PPD)
CSU	California State University
CSULB	California State University, Long Beach
FM	Facilities Management
IFIS	Integrated Facilities Information System
OMP	Operation and Maintenance of Plant
PM	Preventive Maintenance
PPFM	Physical Planning and Facilities Management
SAM	State Administrative Manual
SUAM	State University Administrative Manual

INTRODUCTION

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.

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.

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, Long Beach, Facilities Management (FM) manages the OMP program.

OPINION

We visited the California State University, Long Beach campus from July 12, 1999, through August 20, 1999, and audited the procedures in effect at that time.

In our opinion, the automated work order system was adequate to manage and account for the maintenance/repair program, budget-monitoring procedures were effective, maintenance materials and equipment were adequately controlled, and the utilities management program was established in accordance with CSU policy. Areas needing improvement are mentioned 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 [5]

PREVENTIVE MAINTENANCE [5]

The Integrated Facilities Information System (IFIS) preventive maintenance (PM) program was not fully operational. A fully operational preventive maintenance program, which produces complete administrative reports, decreases the risk of system breakdowns and helps to ensure that maintenance and repairs are performed on a timely basis.

PROGRAM ADMINISTRATION [6]

Oversight over the work order program was in need of improvement. Improving oversight over the work order program reduces the risk of system breakdowns and helps to ensure that maintenance and repairs are performed in a timely manner.

CHARGEBACKS AND NON-MAINTENANCE WORK [6]

Documentation to support indirect overhead charges was not available. Adequate support for indirect overhead charges helps to ensure that all costs are fully reimbursed to facilities management for chargeback work performed.

PHYSICAL MASTER PLAN [7]

A written summary report of the campus physical master plan reevaluation had not been submitted to Capital Planning, Design and Construction. Evidencing review of the campus physical master plan helps to ensure that facilities meet current and future needs.

OBSERVATIONS, RECOMMENDATIONS, AND CAMPUS RESPONSES

MAINTENANCE MANAGEMENT PROGRAM

PREVENTATIVE MAINTENANCE

The Integrated Facilities Information System (IFIS) preventive maintenance (PM) program was not fully operational.

PM work schedules and detailed work tasks had not been entered into the PM program and verified for all crafts. In addition, automated PM scheduling and administrative reports were not available.

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 performance of duties and functions as well as an effective system of internal review.

The facilities management associate director stated that the PM data conversion from the previous maintenance management system to the IFIS was neither complete nor accurate. He further stated that standing work orders were created to cover all PM work at the time of conversion, but automated scheduling and administrative reporting was not possible. Over the past 5 months, facilities management has rebuilt the PM program for 97 of 147 (66%) equipment sites and estimates total completion by October 1999.

A PM system that is not fully operational increases the risk of ineffective and inefficient PM scheduling and coverage for campus equipment and facilities.

Recommendation 1

We recommend that the campus complete development and implementation of the IFIS preventive maintenance program, including PM scheduling and administrative reporting.

Campus Response

The campus concurs with the recommendation. It completed development and implementation of the IFIS preventive maintenance program as planned. The system is now functioning and preventive maintenance items are being scheduled through the IFIS. Copies of scheduling and administrative reports generated by the system have been provided to the auditors. Corrective action on this recommendation is complete.

PROGRAM ADMINISTRATION

Oversight over the work order program was in need of improvement.

As of August 19, 1999, 56 routine and chargeback work orders were over 120 days old. The oldest was dated January 1998.

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 management director stated that the IFIS system is relatively new and processes are still being improved. He further stated that many of the overdue work orders are known to be complete but have not been closed in the IFIS system. Additionally, the IFIS system assigns due dates based on a priority code, and it may not be possible to schedule the work by the assigned due date because of customer conflicts. In these cases, the assigned due dates may not have been adjusted, resulting in an erroneous overdue status.

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 open work orders, make necessary corrections to work order due dates, and ensure work is completed as scheduled.

Campus Response

The campus concurs with the recommendation. Procedural changes have been made to clear up the backlog of overdue work orders. All supervisors are notified daily of any overdue work orders on their welcome screens when logging into IFIS. An aggressive turnaround time has been imposed for all work orders. Documentation showing the up-to-date status of work orders has been provided to the auditors. Corrective action on this recommendation is complete.

CHARGEBACKS AND NON-MAINTENANCE WORK

Documentation to support indirect overhead charges was not available.

CSU directive BA 84-25, Implementation of Trustees' Resolution RA 9-83-057, dated July 25, 1984, states, in part, that each campus will develop a chargeback system, which must ensure the return of all direct labor and material costs to the plant operations budget. Additionally, the policy should include

reimbursement for overhead or indirect costs. These latter costs include reimbursements for administrative processing, estimating, supervision, equipment, vehicles, etc., and would normally be calculated as a percentage of total costs.

The associate vice president for physical planning and facilities management and the facilities management director were aware of the need for enhanced support of indirect charges. They stated that the services of KPMG had been recently contracted to develop a systematic approach for the determination of indirect charges, and KPMG is expected to complete the project within the next few weeks.

Lack of proper support for indirect overhead charges increases the risk that all costs will not be fully reimbursed to facilities management for chargeback work performed.

Recommendation 3

We recommend that the campus develop and retain documentation in support of indirect charges.

Campus Response

We concur with the recommendation. KPMG completed their work and documented a methodology for determining indirect costs. The campus announced the new rates to the campus on November 16, 1999. The rates became effective on January 3, 2000. Documentation describing the methodology and supporting the implementation of the new rates has been provided to the auditors. Corrective action on this recommendation is complete.

PHYSICAL MASTER PLAN

A written summary report of the campus physical master plan reevaluation had not been submitted to Capital Planning, Design and Construction (CPDC).

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 PPD (Capital Planning, Design and Construction).

The associate vice president for physical planning and facilities management (PPFM) stated that the omission was an administrative oversight and that the campus continually reevaluates all parts of the physical master plan.

Without periodic review of the campus physical master plan, there is an increased risk that facilities will not meet current and future needs.

Recommendation 4

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

Campus Response

The campus, along with various other CSU campuses sought and received verbal confirmation from CPDC that the SUAM Section 9009 was out of date and needed to be updated. Everyone agrees that periodic evaluation of campus master plans is necessary. However, the need to do this every three years, especially on mature campuses, is unnecessary and not productive. CPDC has concurred and will change the referenced section to require periodic evaluations. A letter to our campus from Pat Drohan confirms this and indicates that our campus is in compliance with the intent of this section of SUAM. A copy of that letter has been provided to the auditors. Corrective action on this item has been completed.

APPENDIX A: PERSONNEL CONTACTED

<u>Name</u>	<u>Title</u>
Dr. Robert Maxson	President
Laurie Angel	Division Fiscal Manager
Charles Aubrey	Storekeeper
Tim Ball	Associate Director, Facilities Management
Susan Brown	Director of Physical Planning
Scott Charmack	Associate Vice President of Physical Planning & Facilities Management
William Griffith	Vice President for Administration and Finance
Richard Hernandez	Manager of Custodial Services
Kathleen Hext	Director of Internal Auditing
Mikell Morrison	Administrative Operations Manager, Facilities Management
Mary Pearson	Buyer, Facilities Management
Robert Quirk	Director of Facilities Management
Jeff Riggs	Manager of Grounds and Landscaping
Martha Rivera	Supervisor Customer Service Center
Jacqueline Sunde	Budget Manager, Facilities Management
Suzanne Wallace	Assistant Director, Facilities Management
Randall Walsh	Division Information Systems Supervisor
Dewayne Wolfe	Associate Director, Facilities Management
Mike Wythe	Building Trades Supervisor