SEISMIC SAFETY & DISASTER READINESS

CALIFORNIA STATE UNIVERSITY, LONG BEACH

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BOARD OF TRUSTEES

THE CALIFORNIA STATE UNIVERSITY

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ABBREVIATIONS

BOT	Board of Trustees, The California State University
CCR	California Code of Regulations
CPB&G	Committee on Campus Planning, Buildings and Grounds, CSU Board of Trustees
CSTI	California Specialized Training Institute in San Luis Obispo
CSU	California State University
CSULB	California State University, Long Beach
DRP	Disaster Recovery Plan
EH&S	Environmental Health and Safety
EMEP	Earthquake/Major Emergency Preparedness – (a CSU task force formed in spring 1985 and disbanded in 1990)
EO	Executive Orders from the Chancellor
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
ICS	Incident Command System protocols required by SEMS regulations
IS	Information Systems
ITS	Information Technology Systems, CSULB
OES	Office of Emergency Services, State of California - Governor's Office
PP&D	Physical Planning and Development, Chancellor's Office
SEMS	Standardized Emergency Management System regulations issued by OES in September 1994
SRB	Seismic Review Board of The CSU formed in 1992
UPS	Uninterruptible Power Supply

INTRODUCTION

PURPOSE

Our overall audit objective was to furnish an independent appraisal of the seismic safety and disaster readiness functions, to ascertain compliance with established policies and procedures, to determine adequacy of internal controls, and to identify opportunities for operational improvements which would help better achieve goals and objectives.

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

- necessary seismic retrofitting has been done so facilities meet the relevant building standards in Title 24 of the California Code of Regulations;
- new construction complies with Board of Trustee policy for seismic peer review (RCPBG 05-93-13);
- reasonable facility measures for disaster avoidance and prevention have been implemented, e.g., anchoring unsecured furniture and equipment or providing for fire suppression - automatic sprinklers and portable extinguishers;
- there has been coordinated campuswide planning and preparation for disaster preparedness and response, development and promulgation of sound plans and strategies, and continued vigilance to maintain and update plans;
- campuses have effective response capabilities to the most probable incidents that may affect the safety of personnel, damage assets, or cause significant business interruption;
- buildings can be evacuated during disasters/emergencies;
- reasonable provisions have been made for the availability of equipment, information systems, records, supplies, and trained personnel when needed; and
- tests/exercises have been conducted to prove plan viability and identify deficiencies or weaknesses in response instructions.

SCOPE AND METHODOLOGY

The review emphasized but was not limited to compliance with state laws, Board of Trustee policy, and Chancellor's Office and campus policies, letters, and directives.

Various campus functions and offices were involved including, for example, facilities management, environmental health and safety, public safety, student health center and computer center. Auxiliary organizations were generally excluded from the audit except for the seismic safety of buildings that they occupy which have been prioritized by CSU's Seismic Review Board for retrofitting.

The 1995/96 and 1996/97 fiscal years were the primary periods reviewed for disaster preparedness and planning. However, other earlier years were also included as needed, in part, because the seismic safety action plan for the system dates back to the Board of Trustees resolution in May 1993.

During the course of the audit, we:

- interviewed responsible personnel;
- inspected certain facilities such as the emergency operations center, the computer center, and telephone switch rooms;
- reviewed various plans and documents;
- examined emergency equipment and supplies; and
- tested selected devices and features integral to the campus system for disaster mitigation, preparedness, response and recovery.

BACKGROUND

As indicated in the May 1993 Agenda Item 7 of the Board of Trustees' Committee on Campus Planning Buildings and Grounds, the CSU relies upon the requirements of Title 24 of the California Code of Regulations (CCR) for seismic safety building standards. From a structural standpoint, the CSU has been specifically involved in a seismic retrofitting program since 1992. In the 1992/93 Budget Act, funds were provided for seismic reviews of CSU facilities. In implementing this program, the CSU formed a Seismic Review Board (SRB) which has been active with essentially the same membership since its original formation. The focus of this program has been to identify and mitigate the highest life safety risks. Part of the program has been for the SRB to rank order facilities on the degree of seismic risk, subject the highest risks to further engineering investigation and, if warranted, capital outlay retrofit projects. The resolution of the committee in May 1993 (RCPBG 05-93-13) also provided for independent technical peer reviews of the seismic aspects of all construction projects from their design initiation, including both new construction and remodeling.

Appendix I_a of the 7/19/95 Report of the Ad Hoc Committee on Emergency Preparedness contains a recent history of emergency planning in the CSU. This report indicates that much of what is in place within the CSU at the current time can be traced to the Task Force on Earthquake/Emergency Preparedness

(EMEP) formed in the spring of 1985. The EMEP Task Force was instrumental in development of Executive Order (EO) 524 issued April 5, 1988. While this EO is dated, it is still in effect as systemwide policy.

In April 1994 (approximately three months after the Northridge earthquake), the CSU convened the Ad Hoc Emergency Preparedness Committee. The July 19, 1995 report of the committee was circulated to the campuses but not implemented on a systemwide basis.

In September 1994, the governor's Office of Emergency Services issued "new Standardized Emergency Management System (SEMS) regulations with which the CSU and all other state agencies as well as local governments and special districts must comply."

Disaster readiness terminology varies. Disaster is associated with emergency management or emergency operations and sometimes with other terms such as business continuity. The "3 R's" of business continuity planning have been described as readiness, recovery, and restoration and defined as follows:

READINESS
- Disaster Prevention and Avoidance
- Emergency Preparedness
- Corporate-wide Planning
- Business Unit Recovery Planning

RECOVERY
- Incident Management and Initial Recovery

RESTORATION
- Long-term Business Recovery

OPINION

We visited the California State University, Long Beach campus from April 7, 1997 to May 16, 1997 and reviewed the seismic safety and disaster readiness functions in effect at that time.

We found that the structural hazards posing the highest life safety risk have been retrofitted and that buildings are reevaluated as needed. In addition, many of the information technology issues have been addressed. Also, new construction has been subjected to independent technical peer review for seismic aspects. While various actions have been taken to address non-structural hazards, continued vigilance is warranted.

We further found that the campus has a central disaster/emergency plan with provisions such as an emergency operations center and integrated team structure as required by the state's Standardized Emergency Management Regulations. However, in our opinion, the plan and the degree of preparedness would be improved by more regular oversight from the Emergency Preparedness Steering Committee, formalized training provisions, a definitive program for training and exercising, and additional back-up/off-site storage for vital data and records. Specific improvements to environmental controls in the computer center and the main telephone switch room are also recommended.

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.

ENVIRONMENTAL AND FACILITY CONTROLS

NON-STRUCTURAL HAZARDS [7]

The campus had not completed the mitigation of non-structural hazards to the extent possible. Securing hazards will further reduce the possibility of injuries and potential damages.

UNINTERRUPTIBLE POWER SUPPLY [8]

The mainframe computer equipment (including the hard drive storage units) was not protected by a backup battery or uninterruptible power supply (UPS). In the main telephone switch room, three voice and data communications switches were not connected to the existing UPS and emergency generator. A UPS will reduce the likelihood of disruptions and loss of data and communications capabilities.

AUTOMATIC FIRE SUPPRESSION SYSTEM [9]

The computer center lacks a fully automatic fire suppression system. Such a system would be more effective in extinguishing larger fires.

REMOTE ALARMS [9]

The main telephone and data communications switch room, which is unoccupied outside of normal business hours, did not have remote notification for air conditioning unit failure or the presence of smoke. Remote notification reduces the risk of disruption of voice and data communications.

DISASTER PLANNING

NEW EMPLOYEE ORIENTATION [10]

New employees were not receiving orientation on the emergency action plan for the campus. Such orientations would reduce both the exposure of new employees to unnecessary safety risks and potential legal liabilities for the campus.

TRAINING [11]

The *Multi-Hazard Emergency Operation Plan* did not provide specificity on training. Specific training goals identify the type of training, the desired number of hours, and targeted trainees and further demonstrate management's commitment.

PLAN APPROVAL [12]

Neither the campuswide *Multi-Hazard Emergency Operations Plan* nor any of the business unit plans indicated whether they had been approved by campus administration. Approval by campus administration signifies both endorsement and commitment to emergency planning.

ALTERNATE PROCESSING SITE [12]

Although the Disaster Recovery Plan for Information Technology Services (ITS) identifies two potential alternate processing sites, an analysis had not yet been performed to determine the feasibility and detail requirements of the use of these sites. Performing the feasibility and requirements analysis in advance will reduce the amount of time it will take to migrate to an acceptable alternate site should a disaster occur.

MULTI-HAZARD EMERGENCY OPERATIONS PLAN

EMERGENCY EXERCISES [13]

The breadth and frequency of emergency exercises completed by the campus did not involve all elements of the emergency management staff. Involvement of the total emergency management staff would provide opportunities, at formal prescribed intervals, for the campus to document and evaluate the weakness or failures of the existing plan and to amend the document as needed.

RECORDS BACKUP [14]

Several key areas of the campus were not backing up and storing "first-class" records at an off-site location. Backup and storage at an off-site location minimizes the risk of disruption to campus operations.

ITS DISASTER RECOVERY PLAN (DRP) [15]

The ITS DRP had not been subject to any scheduled tests or training sessions. Periodic testing and training provides assurances on the feasibility of plan details and the efficiency and timeliness of recovery operations.

OBSERVATIONS, RECOMMENDATIONS, AND CAMPUS RESPONSES

ENVIRONMENTAL AND FACILITY CONTROLS

NON-STRUCTURAL HAZARDS

The campus had not completed the mitigation of non-structural hazards to the extent possible.

Page 5 of the campus *Multi-Hazard Emergency Operations Plan* states:

> Measures will be taken to reduce the potential impact of known hazards on the campus if feasible.

In September 1994, the campus Office of Environmental Health and Safety (EH&S) started a program to "identify and eliminate, to the extent possible, non-structural earthquake hazards." While there have been publicized efforts on campus to make known the availability of special bungee cords, screws and drills for installation, the number of hazards which have been secured is minimal. The director of Safety and Risk Management (formerly EH&S) indicated that, initially, there were issues as to reimbursement for the costs incurred and, even after central funding, some continuing resistance to permanently securing non-structural hazards.

In order to protect IS assets and reduce the risk of disruption of operations, the Information Technology Services (ITS) manager of Administrative Computing Services issued a purchase order in April, 1997 to install bracing for critical computer components in the computer center. Subsequent to the completion of our fieldwork, the campus provided evidence that this work had been completed. However, some peripherals, tape racks and cabinets still require bracing. Without proper bracing, tall equipment, racks, and cabinets could fall on personnel or critical equipment or block access paths and prevent timely evacuation.

Failure to take reasonable mitigating measures to secure non-structural earthquake hazards subjects the campus to increased exposure to legal liability for injuries that result from earthquakes.

Recommendation 1

We recommend that the campus develop a system to assure further mitigation of non-structural hazards.

Campus Response

The campus concurs with the recommendation. Physical Planning & Facilities Management (PP&FM) and safety & Risk Management (S&RM) will develop a process where the potential risk issues are identified on a continual basis. After the risks are identified, PP&FM and S&RM will work with the appropriate parties to assist with developing mitigating measures to secure non-structural earthquake

hazards. In addition, PP&FM and S &RM will establish a process in which to continually educate the campus population regarding the hazards and liability involved with not mitigating these issues. These processes are estimated to be in place by November 15, 1997.

Physical Planning & Facilities Management would like it noted that all non-structural/falling hazards listed in the report compiled by Englekirk & Sabol at the direction of the Chancellor's Office have been completed.

UNINTERRUPTIBLE POWER SUPPLY

The mainframe computer equipment (including the hard drive storage units) was not protected by a backup battery or uninterruptible power supply (UPS). In the main telephone switch room, three voice and data communications switches were not connected to the existing UPS and emergency generator.

Power fluctuations or failure can disrupt computer operations and damage computer data. A UPS battery pack would allow the computer to run unaffected during short-term outages. For long-term outages, a UPS would allow the operators to shut down the computer in a properly controlled manner to prevent loss of data. Voice and data communications could be disrupted in the event of power fluctuations or failure in the primary power supply.

The ITS manager of Administrative Computing Services indicated that funding for a UPS unit was not available until recently and that she has issued a purchase request and plans to install a UPS later this year. For the main telephone switch room, we were informed that, as additional equipment was added to the room, three new switches were inadvertently connected to an additional breaker panel that was not protected by the generator or UPS. The ITS director of Telecommunications and Resource Management noted her intention to have the switches connected to the UPS and generator circuits.

Recommendation 2

We recommend that the campus install a suitable UPS in the main computer room as planned and that all equipment in the main telephone switch room be connected to circuits protected by the UPS and emergency generator.

Campus Response

The campus concurs with this recommendation. An Uninterruptible Power Supply (UPS) has been ordered by Information Technology Services (ITS) for the Main Computer Room in SS/AD and will be installed by Facilities Management upon receipt.

The existing emergency generator that provides service to the Main Telephone Switch Room in Building LA 3 will be reviewed by a licensed Electrical Engineer to determine if capacity is available to connect the small amount of remaining communications equipment. Upon completion of the analysis, a

decision will be made as to how to proceed. We anticipate this decision will be made by October 15, 1997.

If the cost benefit analysis supports the installation of a fire suppression system, a funding priority will be assigned.

AUTOMATIC FIRE SUPPRESSION SYSTEM

The main computer room lacks a fully automatic fire suppression system.

Mainframe computer areas, in general, present a higher risk of fire than other facilities due to the presence of electrical equipment, forced air conditioning, computer paper, and magnetic tapes. Hand-operated extinguishers may not be adequate or safe for putting out a larger fire that could result in the complete loss of the data center. An automatic fire suppression system would reduce the risk of fire and the resulting loss of IS assets and disruption of operations.

Recommendation 3

We recommend that the campus conduct a cost/benefit analysis to evaluate the feasibility of installing an automatic fire suppression system in the main computer room.

Campus Response

The campus concurs with this recommendation. Information Technology Services and Physical Planning & Facilities Management are currently conducting a cost benefit analysis to evaluate the feasibility of installing an automatic fire suppression system in the main computer room.

A Preliminary cost estimate to install an automatic fire suppression system in the Main Computer Room is $65,000 to $85,000. A complete cost analysis comparing the initial installation cost and yearly maintenance cost versus the cost to restore data, replace equipment and restore services should be completed by October 15, 1997.

If the cost benefit analysis supports the installation of a fire suppression system, a funding priority will be assigned.

REMOTE ALARMS

The main telephone system and data communications switch room, which is unoccupied outside of normal business hours, did not have remote notification for high temperatures and the presence of smoke.

The equipment generates a large amount of heat and could fail from overheating in the small room if the air conditioning unit were to fail. In addition, even though the room is protected by an automatic

Halon fire suppression system, the detection of smoke should be made known to the appropriate authorities. If the fire originates outside the room, it will eventually penetrate the room after the discharged Halon has dispersed. If an electrical short causes the fire, the fire may start again after the Halon is dispersed.

While the main switch room does have a remote notification feature for water intrusion, remote notification for the other risks was not included at the time the water detection system was installed.

Recommendation 4

We recommend that the existing remote notification system in the main telephone switch room be expanded to include smoke and high temperature conditions.

Campus Response

Information Technology Services and Physical Planning & Facilities Management are taking this recommendation under review.

It should be noted that there are no Fire/Life/Safety or Building Codes that require the installation of the remote alarms. The communications equipment currently has a loss-power feature built into it. Upon loss of power and /or other equipment failure, University Police are notified via an automatic message sent by the equipment.

ITS and PP&FM are currently exploring the feasibility of installing a high-temperature alarm on the air-conditioning unit and a smoke-detection alarm for the dry type fire suppression system that services the communications equipment in the Main Switch Room in LA3. In addition, ITS smoke-detection alarm for the dry type fire suppression system that services the communications equipment in the Main Switch Room in LA 3. In addition, ITS and PP&FM are exploring the feasibility of combining the high-temperature alarm and the smoke-detection alarm with the existing water-intrusion alarm so that there is only one control device sending messages to University Police which will send individual messages that communicate the specific nature of the problem.

DISASTER PLANNING

NEW EMPLOYEE ORIENTATION

New employees were not receiving orientation on the emergency action plan for the campus.

8CCR3220(e)(3) states:

> The employer shall review with each employee upon initial assignment those parts of the plan that the employee must know to protect the employee in the event of an emergency.

New employee orientation includes some handouts on emergency communications and safety but not emergency evacuations.

The absence of orientation temporarily exposes new employees to unnecessary safety risks and creates potential legal liabilities for the campus in the window period between the hiring date and the next scheduled evacuation exercise.

Recommendation 5

We recommend that the campus incorporate information on the emergency action plan into the new employee orientation process.

Campus Response

The campus concurs with this recommendation. Emergency information, including emergency evacuation instructions, has now been incorporated into new employee orientation programs, which occur weekly for new staff and annually for new faculty.

TRAINING

The *Multi-Hazard Emergency Operation Plan* did not provide specificity on training.

Page 4 of the campus *Multi-Hazard Emergency Operations Plan* states:

> Training and exercising are essential to make emergency operations personnel operationally ready. This emergency plan will include provisions for training.

The *Multi-Hazard Emergency Operations Plan* indicates a large amount of training for emergency operations personnel notably in hazardous materials, urban search and rescue, public safety, the building marshal program, and student health center. However, the plan does not indicate goals in terms of training that should be provided, how much training, and to whom. Without this specificity, the campus risks having an inadequate number of people trained and in the wrong areas.

Recommendation 6

We recommend that the campus specifically establish appropriate training goals for emergency management personnel.

Campus Response

The campus concurs with the recommendation and we will establish specific training goals for emergency management personnel, which will include training requirements for each EOC, ICS Section

(i.e., Operations, Logistics, Planning and Finance). This was discussed at the September 10, 1997, Emergency Preparedness Steering Committee meeting and a subcommittee was established to work on the section. Completion of the section in the Emergency Operations Plan establishing these training goals is estimated for January 31, 1998.

PLAN APPROVAL

Neither the campuswide *Multi-Hazard Emergency Operations Plan* nor any of the business unit plans indicated whether they had been approved by campus administration.

Executive Order (EO) 524 delegates to the campus presidents the responsibility for maintenance and regular updating of the institution's plan, but it does not specifically require that the plan be approved by them. This EO further indicates that the emergency preparedness plan should "be regarded as a permanent and important element in the policy structure of the institution." Page 1 of the campus plan also states that "the campus president establishes the basic policies."

Absence of plan approval by the president or his designee does not link the plan to the policies of the campus and execution of the responsibilities in EO 524.

Recommendation 7

We recommend that the campus president or designee formally approve emergency planning documents for the campus.

Campus Response

The campus concurs with the recommendation. The Multi-Hazard Emergency Operations Plan was approved by Vice President William H. Griffith, designee of the President, in a memo dated August 19, 1997. The Emergency Operations Plans for the other business units are currently under review by the Emergency Preparedness Steering Committee. Once the Committee has approved these, they will also be recommended for approval by the Vice President. Completion of this process is estimated for December 31, 1997.

ALTERNATE PROCESSING SITE

Although the Disaster Recovery Plan for Information Technology Services (ITS) identifies two potential alternate processing sites, an analysis had not been performed to determine the feasibility and detail requirements of the use of these sites.

Not performing a feasibility and requirements analysis in advance increases the amount of time it will take to actually migrate to an acceptable alternate site in the event of a disaster.

The ITS director of Administrative Computing Services indicated that ITS has been planning to conduct a detailed analysis of the use of Cal Poly, San Luis Obispo as a "hot" alternate processing site and a (currently unused) computer facility in the campus library building as a "cold" site.

Recommendation 8

We recommend that the campus proceed with its detailed feasibility and requirements analysis of alternate processing site options toward the goal of establishing a low-cost alternate processing site plan.

Campus Response

The campus concurs with the recommendation and is proceeding with the feasibility and requirements analysis of alternate processing site options. In April 1997, we obtained updated quotes on commercial hot site services from COMDISCO and SunGard. Considering the nature of our business, it has not been judged to be cost-effective to employ these services.

Two other options have been given priority. The first is a raised floor, air-condiitioned space in the Library South building which was initially created for use by the Library as a data center. After migrating their systems to the administrative mainframe, the room was essentially vacated. It is feasible to set up a data center with new generation equipment that would fit in the space and would provide the basis for restoring systems and resuming operations in a very short period of time. IBM has provided us a letter assuring prompt response in providing the equipment. The second option, an agreement with Cal Poly, San Luis Obispo, requires further analysis and will be pursued.

MULTI-HAZARD EMERGENCY OPERATIONS PLAN

EMERGENCY EXERCISES

The breadth and frequency of emergency exercises completed by the campus did not involve all elements of the emergency management staff.

The requirements of Executive Order (EO) 524 for exercising are as follows:

1. exercises (drills or simulation) involving appropriate segments of the campus community must be held at least semi-annually; and
2. every segment of the response organization must participate in at least some element of a total exercise at least once per year; and
3. a campus-wide test event must be conducted at least once every two years.

Section 8 of the California Emergency Plan closely correlates in terminology to EO 524 with definition of a test and three types of exercises. The statewide plan defines a full-scale exercise as follows:

> Full-scale exercises simulate an actual emergency. They typically involve complete emergency management staff and are designed to evaluate the operational capability of the emergency management system.

The last exercise at the campus was October 12, 1994. The campus had plans to schedule another exercise during fall 1997that would be facilitated by the California Specialized Training Institute–a branch of the state's Office of Emergency Services.

The extent of exercises on the campus is less than contemplated in EO 524 in part because of a narrow definition of what constitutes the response organization.

Less than full-scale exercises at prescribed intervals with involvement of the total emergency management staff does not provide enough opportunities for the campus to document and evaluate the weakness or failures of the existing plan and to amend the document as needed.

Recommendation 9

We recommend that the campus involve their emergency management staff in full-scale exercises.

Campus Response

The campus concurs with the recommendation and plans to conduct full-scale exercises as required by EO 524. The next excercises are scheduled for November 18-21, 1997, and will be facilitated by the California Specialized Training Institute. Future exercises will be scheduled by the Emergency Preparedness Steering Committee at prescribed intervals.

RECORDS BACKUP

Several key areas of the campus were not backing up and storing "first-class" records at an off-site location. These included employee personnel files, signed contracts, and certain non-ITS computer applications in personnel and financial aid.

Enclosure 8 to the campus Multi-Hazard Emergency Operations Plan (p.62) addresses vital records protection through definition of first-class records (irreplaceable/cannot be reconstructed) and policy provisions that state:

> All records classified as "first-class" shall be duplicated (preferably microfilmed) and stored at an off-site location known by the university administration.

Copies of personnel records were not being made because the department was waiting on a new document imaging system. It was suggested that signed contracts were available elsewhere such as through the contractor. While the campus had an agreement for off-site storage of critical computer data through ITS, the non-ITS applications were not included.

If a fire or other disaster should destroy the area of the building where the primary records, backup copies, and source documents are stored, the records may be permanently lost or may not be easily recreated in a timely manner. This could disrupt campus operations.

Recommendation 10

We recommend that the campus backup and store all "first-class" records at an off-site location.

Campus Response

The campus concurs with this recommendation. Equipment and software have now been installed in staff personnel to begin the imaging phase of a document management system. It is anticipated the imaging of vital staff personnel records will be completed during the 1997/98 Fiscal year. The project will incorporate appropriate off-site data storage. Non-ITS applications in personnel and financial aid will be included in same contact as the ITS applications, which are backed up and sent off-site regularly. With regard to contracts, the campus maintains signed copies of contracts in three locations on campus as well as the off-site contractors' copies. The key elements of the contracts are on the computer system maintained by ITS and backed up nightly.

A review of items classified as "first class" records will be conducted, with redefinition of such records as appropriate. The estimated completion date for this review is December 31, 1997.

ITS DISASTER RECOVERY PLAN (DRP)

The ITS DRP had not been subject to any scheduled tests or training sessions.

Without periodic testing and training, the feasibility of recovery plan details and the efficiency and timeliness of recovery operations are not assured.

The ITS director of Administrative Computing Services indicated ITS had planned to implement a table-top testing exercise; but, this was delayed because of the successful activation of the response team for a flood in January of 1995. He indicated that this real disaster provided adequate testing and training of the ITS DRP. However, more than two years have passed and other disaster scenarios have not been tested. Subsequent to our visit, ITS conducted a table-top exercise.

Recommendation 11

We recommend that the campus establish a DRP testing program such as described in the ITS DRP to provide both testing and training value. The testing should be continued on a periodic basis.

Campus Response

The campus concurs with this recommendation. ITS has established a DRP testing program and will continue to test its Disaster Recovery Plan on an annual basis.

APPENDIX A:
PERSONNEL CONTACTED

Name	Title
Tom Angell	Director, Staff Personnel Services
Elizabeth Beall	Contracts Supervisor
Vic Cannon	Health Services Assistant, Student Health Center
Tom Capp	Ericsson Telecommunications
Scott Charmack	Associate Vice President for Physical Planning and Facilities Management
Peggy Douglas	Manager of Administrative Computing Services
Larry Elliott	Planned Maintenance Coordinator, Facilities Management
Will Glen	Sergeant, Public Safety
William Griffith	Vice President for Administration and Finance
Char Hankey	Director of Telecommunications and Resource Management
Kathleen Hext	Director of Internal Auditing
Charles Hughes	Director of Purchasing
Kristen Hunter	Environmental Health & Safety Coordinator, College of Natural Sciences and Mathematics
Ted Kadowaki	Assistant Vice President for Administration and Finance
Gloria Kapp	Director of Financial Aid
Steve La	Director of Network Services
Ron Lee	Associate Vice President for Information Management and Analysis
Robyn Mack	Director, Budget and Human Resources Management
Michael Mahoney	Associate Vice President of Information Technology, Academic Affairs
Michael Markoski	Assistant Director of Programming Services, Administrative Computing
Pat Matzke	Manager of Process and Preparation Services, Library
Jeffrey Mellon	Radiation Safety Officer, College of Natural Sciences and Mathematics
Jeanne O'Dell	Space and Facilities Manager
Jack Pearson	Director of Public Safety
Rob Quirk	Director of Facilities Management
Maryann Rozanski	Director of Safety and Risk Management
Ray Soliman	University Controller
Richard Timboe	Assistant Vice President for Information Technology Services
James Trowbridge	Manager of Personnel Systems
Renee Twigg	Director, Student Health Center
David Young	Director of Administrative Computing Services