# Learning and Technology Services

# Disaster Recovery Plan

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# LTS DISASTER RECOVERY PLAN DESCRIPTION

## Purpose and Scope

The purpose of this plan is to document those actions necessary to resume operations after a disaster which disrupts or disables the Learning and Technology Services equipment or facility located in the basement of Schofield Hall room 6 (S 6). The plan assumes that the University will continue uninterrupted operation and that administrative processes will be sustained.

The plan will discuss disasters of several magnitudes but cannot address all of the eventualities that might occur. The plan, however, can provide a base on which to make effective recovery decisions no matter what the level or location of damage. It is the intent of the authors that all parties know what to do during and after a disaster and that confusion or uncertainty during the recovery will be minimal.

An Emergency Contingency Plan for the campus is available from John Baltes, Director of Loss Prevention and Safety http://www.uwec.edu/lps/plans/emergency.htm. The plan contains campus-wide emergency procedures, responsibilities, resource teams and sources of assistance. The plan is reviewed and revised each year. This document is supplemental to that plan and contains specific information related primarily to LTS/S 6.

## What Is Not Addressed in This Plan

Functionality of desktop computers (PCs) is not addressed. It is assumed that PCs will continue to operate as "stand alone" devices with much reduced functionality in a time of disaster recovery. Applications such as Internet, email and database access would not be available until a minimal level of connectivity to central resources (located in Library 5015 temporarily) was established.

This plan does not include user procedures developed by each unit to sustain operations during the disaster and the early recovery period.

This plan does not include procedures to be followed in the event of a disaster of such proportion that the University suspends operations.

## General Responsibilities

The ranking manager, supervisor, or employee on the scene of an incident has the following responsibilities, ranked in order of importance:

1. Ensure the safety of all personnel. If necessary, evacuate the building. Ensure that all individuals are accounted for and that this fact is reported to University and civil officials who appear on the scene.

   Personnel safety is of prime importance! Nobody with knowledge of this contingency/disaster plan is required to perform any service beyond the assurance of his or her own personal safety and the safety of others. The completeness and integrity of the data for purposes of recovery have been provided for in the backup process. Take no unnecessary risks.

2. Notify the Communications Center of the incident.

   **Communications Center 9-911**

3. If it is possible for evacuating individuals to remove critical media from the premises, they should be encouraged to do so.

4. Contact one of the individuals on the contact call list provided at the end of each Contingency Plan detailed in this document.

   The site individual should convey to the external official the nature of the incident, the status of the personnel, and the action taken.

5. Leave the building last, after checking, to the degree possible, to see that all employees have left.

6. Identify yourself as the responsible individual to the first University and civil officials to appear on the scene, informing them of the nature of the incident, the status of all personnel, and the action taken.

7. Following the incident, prepare a report describing the incident as it occurred.

## Training and Testing

The Director of LTS is responsible for all LTS training and testing relevant to this plan. The Manager of each unit supported by Learning and Technology Services will develop a plan to operate without computer support for 30 days. LTS and all using units will assure that their people are sufficiently trained to carry out the plan in the event of a contingency.

The plan should be tested by simulating a specific disaster or emergency.

The test will be conducted as follows:

1. The Director of LTS will declare that a particular fictitious event has occurred.

2. LTS personnel will follow the appropriate emergency procedure, but will not contact the Communications Center.

3. The initial stages of the appropriate recovery procedures will be followed. During these procedures equipment will not be moved but personnel will perform their assigned tasks and go to the specified locations.

4. An evaluation team will determine if the people are prepared, the procedures are correct, and the backup facilities are adequate.

The evaluation team will be composed of the following:

1. The Director of LTS.

2. Managers of each group.

## Maintenance of the Plan

This plan will be reviewed annually by a designated member of LTS (Phil Staff) and reviewed by the Director of Learning and Technology Services. When appropriate, the plan will be revised and published.

# RECOVERY TEAM

The following details the assignments, authorities, and responsibilities of the recovery team.

This team becomes effective on the declaration of a contingency and will remain in effect until either the contingency is resolved or the individuals are directed by higher management to resume normal positions of responsibility.

| Recovery Function/Individual | Position Duties |
|---|---|
| **Recovery Coordination**<br>Paul Diedrich | Take those actions dictated by the situation to effect what must be done to get the facility back into operation. |
| **Administrative Support**<br>Roxy Muldoon | Provide administrative support.<br>Distribute necessary supplies.<br>Order necessary replacement supplies.<br>Expedite shipments of supplies. |
| **User Interface**<br>Sally Eckwright | Direct contact with key users. Coordinate priority with the recovery team. Assist users in their emergency operations. |
| **Networking**<br>William Cox | Affect an operational data communications system by determining wiring requirements, ordering communications equipment, installing communications equipment, installing communications software, and coordinating changes to related software. |
| **Production Continuity**<br>Administrative<br>Marian Ritland<br>Networking<br>William Cox<br>NT Servers<br>William Cox<br>Library Automation<br>Steve Elfstrand | Coordinate the installation of the replacement equipment. |
| **Applications Management**<br>Marian Ritland | Assure that the applications will run on the replacement equipment as configured. |
| **Scheduling Supervision**<br>Karen Arnsdorf | Coordinate and maintain the scheduling and test scoring functions as required to support the recovery effort and the necessary production. |

## Vendor Contact List

The list of vendors is maintained by each LTS Manager. Each manager is responsible for the documentation required to replace hardware and call for service, forms, and other items needed to resume the functional operation of their areas of support to the campus.

# RECOVERY PROCEDURES

The recovery process has three phases: short-range, intermediate-range, and long-range.

## Short-Range

1. Assemble LTS management in the Riverside Conference Room (OL 1122)
2. Make initial damage assessment
3. Prepare user notification if appropriate
4. Prepare a draft of the staff schedule
5. Contact the appropriate offices

| | |
|---|---|
| **System Administration** | |
| Purchasing | (608) 263-4488 |
| Engineers | |
| Risk Management | |
| **UNISYS** | |
| Field Engineering | 1-800 422-8466 |
| **UW-Eau Claire** | |
| Risk Management | 36-5482 |
| Purchasing | 36-5171 |
| Facilities Management | 36-3411 |
| **Other** | See LTS contacts list within Microsoft Outlook (maintained by each Manager). |

6. Make a decision to implement other portions of this plan
7. Organize a salvage team and assess damage to the area
   The salvage team will be headed by the Director of LTS and will be composed of campus personnel and representatives from System Administration if appropriate.
8. Order replacement equipment
9. Order supplies

## Intermediate-Range

1. Relocate LTS personnel
2. Set up user network access area
3. Obtain a full inventory and salvage report

## Long-Range

1. Return processing to a reasonable degree of normalcy

# SITE RESTORATION – S 6

The following assumes that, following a disaster, the data center will occupy the same location as it did prior to the contingency. After any structural construction, if needed, is completed, and the data center can be re-occupied, the areas listed below should be equipped as described by area.

Office equipment will be replaced as detailed in the Capital Goods Inventory system except where noted. Items valued at less than $1000 are not reflected in the inventory system.

## Computer Room

**Fire alarm system:** Reinstalled and connected to the main building alarm system, and if possible an automatic fire suppressant system installed. Include two (2) hand held fire extinguishers.

**Water alarm system:** Installed and connected to the main building alarm system.

**Power requirement**: Dual input 480 - ISC/3 Phase 208/120 volt.
The power supply will be input to independent UPSs unit (40KVA). If the battery UPS units are not available at the time the computer components are to be installed, our electricians will need to install power to a breaker/distribution box without UPSs.

**Air conditioning**: Two 20-ton units are required.
It should be a dual compressor with individual controls for each compressor to allow for redundancy. The AC is to be monitored by the EMS system (Facilities Management) for high temperature alerts.

**Raised flooring**: 960 sq. ft. of raised flooring is required.
The new floor should also be wired for ground strapping. There are to be no power outlets underneath the floor.

**Computer system**: See documentation within the NT Server system.

**Tape cabinets**: Sufficient number to house 1000 DLT tapes.

**Supply cabinets**: One large cabinet for computer supplies and two large cabinets for UNISYS supplies.

**Office equipment**: Work station for the operator consoles and terminals, console operator's chair, desk and chair for the operators, shelves for manuals, tape cart, table for work space, document distribution cart, automatic emergency lights, weather radio, and 24-hour clock.

**Phone Requirements**: Operator's console; dial-in line; remote diagnostic.

## Programmer/Analyst Area

Each office area should be supplied with a workstation cluster, chair, file cabinet, shelves for manuals.

## Scheduling Area

The area should be supplied with a reception counter, modular partitions, workstation clusters, shelves, coat rack, worktables, optical scanner, PC to support the scanner, and desk top printers.

## Forms Storage Area

Area should be supplied with a 36"X 18"X 88" 5 shelf, 45 Units of 22 Gauge steel, warehouse step ladder, 5 steps, hardwood platform truck, 48"X 27"X 8 1/2", Hand truck 47" X 19", Poly-cover, 4mil X 12ft X 100ft, tape vault, fire alarm system installed, and fire extinguishers.

# S 6 TEMPORARY SITE RELOCATION – LIBRARY 5015

If the S 6 facility cannot be re-occupied in a reasonable time, following a disaster, the Learning and Technology Services Data Center will move to Library 5015 and other designated locations in the Library.

Locks to the areas assigned will need to be changed and keys will need to be issued.

If the tape vault is unusable, the off-site storage vault will be used for the daily tape rotation.

## Temporary Computer Room Requirements:

**Location**: The computer and peripheral equipment will be located in Library 5015.

**Power requirement**: Recommendation: Determine power capacity requirement and connect Library 5015 to building power generator.

**Air conditioning**: The unit installed in Library 5015 has sufficient cooling capacity to satisfy minimal requirements.
Depending on the time of year, additional air conditioning may be needed. Fans could be located in doors to send air out into the library.

**Computer system**: Equipment list as determined by each manager.

**Data communications**: There is fiberoptic cable to Library 5015 from S 6.

**Tape cabinets**: Sufficient number to house 1000 DLT tapes.

**Supplies cabinets**: Two large cabinets for computer supplies and three large cabinets for UNISYS supplies.

**Support equipment**: Work station for the operator consoles, and terminals, tape cart, table for work space and a document distribution cart.

## Temporary User Work Area Requirements:

A user work area will be established in the Library with an adequate number of PCs.

Connections will be cabled as needed. A single ethernet outlet can be expanded to 24 or 48 ports by the temporary installation of a Cisco switch or mini switches from Desktop.

## Temporary Office Space Requirements:

Temporary office space will be allocated within the Library. A good option to examine would be the study areas where wireless ethernet has been already installed. In an emergency where professional staff need workstations in order to function, the laptop pool with wireless ethernet cards could be quickly appropriated in order to reestablish functions that need to be returned to operation.

# CONTINGENCY PLAN: S 6 AIR CONDITIONING FAILURE

This procedure details the steps to follow if the primary air conditioning units fail. The failure of a single unit failure and subsequent rising temperature will require the person responsible to make the contacts listed below, opening the computer room doors, and place fans in the back corner in an attempt to cool down the room.

S 6 is monitored around the clock by the Facilities Management Energy Management System (EMS) which also manages the entire campus. An alert is sent to the EMS system anytime the temperature in S 6 reaches 75 degrees. Facilities Management will send HVAC personnel to S 6 within an hour during normal work hours and within two hours on off hours (nights and weekends).

**Responsibility**: William Cox, Manager, Technical Services

1. Contact Facilities Management to arrange for repairs based on the following criteria:
    a. During scheduled working hours
    (7:45 AM - 4:30 PM Monday thru Friday)
    Facilities Management – 36-3411
    b. After scheduled working hours
    (4:30 PM - 7:45 AM Monday thru Friday and weekends)
    Public Safety – 36-2222
2. Power down the processors, servers and networking devices as documented by Technical Services
3. Notify the Help Desk of the need to shut down resources

# CONTINGENCY PLAN: S 6 BOMB THREAT

**Responsibility**: William Cox, Manager, Technical Services

1. Call the Communications Center at 9-911 to report the bomb threat
2. Pull the fire alarm switch outside of the computer room door to activate the building alarm
3. Close the computer room door
4. Leave the building
5. Contact one of the individuals on the Contact Call List (below).
   Tell the contact person the nature of the incident, the status of the personnel, and the action taken
6. Identify yourself as the responsible individual to the first University and civil officials to appear on the scene, informing them of the nature of the bomb threat, the status of all personnel, and the action taken
7. Following the incident, prepare a report describing the incident as it occurred

### Contact Call List

The site individual is given a choice of three people to call. Make one connection only.

| | | |
|---|---|---|
| First call: | Craig Mey | Office 836-3263 \| Home: 838-0004 |
| Alternate 1: | Paul Diedrich | Office 836-3814 \| Home: 834-9900 |
| Alternate 2: | William Cox | Office 836-5931 \| Home: 597-2396 |

If none of the above people are available, then call the Public Safety 36-2222.

# CONTINGENCY PLAN: S 6 FIRE

**Responsibility**: William Cox, Manager, Technical Services

The emergency shut off switches located at each door exit from S 6 will immediately drop all of the power to S 6. The AC units are not included in the emergency shut off controls and can only be shut off by Facilities Management personnel.

1. If the fire is small and appears to be manageable, employees may, at their discretion, use one of the fire extinguishers in the computer room to combat the fire
   **Take no unnecessary risks**.

2. Shut off power to S 6 by pushing the emergency shut off button as you leave the room

3. Close the computer room door

4. Pull the fire alarm switch outside of the computer room door to activate the building alarm

5. Call the Communications Center at 9-911 to report the fire

6. Leave the building

7. Contact one of the individuals on the Contact Call List (below)
   Tell the contact person the nature of the incident, the status of the personnel, and the action taken.

8. Identify yourself as the responsible individual to the first University and civil officials to appear on the scene, informing them of the nature of the fire, the status of all personnel, and the action taken

9. Following the incident, prepare a report describing the incident as it occurred

### Contact Call List

The site individual is given a choice of three people to call. Make one connection only.

| | | |
|---|---|---|
| First call: | Craig Mey | Office 836-3263 \| Home: 838-0004 |
| Alternate 1: | Paul Diedrich | Office 836-3814 \| Home: 834-9900 |
| Alternate 2: | William Cox | Office 836-5931 \| Home: 597-2396 |

If none of the above people are available, then call the Public Safety 36-2222.

## CONTINGENCY PLAN: S 6 FLOOD FORECAST

Assuming the flood is forecast to rise to or near to the level of Schofield's basement**,** the plan is to move all contents of Schofield 6 to Library 5015 by 12 hours before the flood is forecast to occur.

Facilities Planning & Management personnel are responsible for determining the need to move S 6 to Library 5015. The order to move would come from the Director (Terry Classen) or the Associate Director (Derold Schubert). Related activities by Facilities include pumping water (tractor on the pump) from the Little Niagra into the Chippewa River. The bridge over the Little Niagra going to upper campus becomes a dam keeping the Chippewa River from backing up into campus.

**Responsibility**: William Cox

1. Technical Services, vendor engineers (i.e. UNISYS) will shut down the servers, processors, peripherals and electronics and prepare the equipment to be moved

2. Technical Services will disconnect the power and network connections in preparation for moving the equipment

3. Technical Services, vendor engineers and LTS personnel will move the computer components to Library 5015

4. The electricians and LTS personnel will bring up the units on the power available in Library 5015.

5. In addition to the computer and components, the following items will also be moved to the Library area:

    a. Other data center equipment: PCs, Optical Scanner, Desktop Printers

    b. Backup media from the safe (the safe will not be moved)

    c. Tape cabinets with the tapes

    d. Program documentation

    e. Parts cabinet

6. If time permits, a 30-day supply of paper and forms will be moved. To the extent possible, the remaining supplies will be moved to the higher shelves in the storeroom

7. If time permits after steps 1 thru 6 have been completed, office furniture, equipment, and supplies will be moved

8. Items of equipment on the first floor will not be moved unless the flood is forecast to reach that level

9. Users will follow their contingency procedures during the period of shutdown
   A move to an alternate computing site will not be made unless the flood damage is such that the site cannot be re-occupied.

# CONTINGENCY PLAN:S 6 TAKEOVER

This procedure details the steps to be taken if there is a takeover of S 6.

**Responsibility**: See call list below.

1. Give the perpetrator(s) whatever is demanded
   Personnel safety is of prime importance.

2. Leave S 6 if possible to insure personal safety

3. Call the Communications Center to report the incident 9-911

4. Contact one of the individuals on the Contact Call List (below).
   Tell the contact person the nature of the incident, the status of the personnel, and the action taken.

### Contact Call List

The site individual is given a choice of three people to call. Make one connection only.

| | | |
|---|---|---|
| First call: | Craig Mey | Office 836-3263 \| Home: 838-0004 |
| Alternate 1: | Paul Diedrich | Office 836-3814 \| Home: 834-9900 |
| Alternate 2: | William Cox | Office 836-5931 \| Home: 597-2396 |

If none of the above personnel are available, then call the Public Safety 36-2222.

# CONTINGENCY PLAN: S 6 WATER/FLOOD

**Responsibility**: William Cox, Manager, Technical Services

The NetBotz provides around the clock monitoring of water, temperature, and noise entry into S 6. There are four (4) water sensors attached to the NetBotz unit. It reports thresholds exceeded via email to Technical Services personnel.

1. If the water is coming from above, cover the computer components with plastic (a roll of plastic is stored on the top of the supply cabinet in the machine room) and open the doors to S 6 so water will not build up in the room allowing it to spread to rest of building

2. If water is coming from a source which will flood the floor and continue to rise, shut off power to S 6 by pushing emergency off button as you leave S 6
   There are switches located at each of the exits from S 6. The air conditioners are not shut off by the emergency switches.

3. Report the incident by contacting either:

   a. During scheduled working hours
      (7:45 AM - 4:30 PM Monday through Friday)
      Facilities Management – 36-3411

   b. After scheduled working hours
      (4:30 PM - 7:45 AM Monday through Friday and weekends)
      Public Safety – 36-2222

4. Evacuate threatened media

5. Contact one of the individuals on the Contact Call List (below)
   Tell the contact person the nature of the incident, the status of the personnel, and the action taken.

6. Identify yourself as the responsible individual to the first University officials to appear on the scene, informing them of the nature of the water emergency, the status of all personnel, and the action taken

7. Following the incident, prepare a report describing the incident as it occurred

### Contact Call List

The site individual is given a choice of three people to call. Make one connection only.

| | | |
|---|---|---|
| First call: | Craig Mey | Office 836-3263 \| Home: 838-0004 |
| Alternate 1: | Paul Diedrich | Office 836-3814 \| Home: 834-9900 |
| Alternate 2: | William Cox | Office 836-5931 \| Home: 597-2396 |

If none of the above personnel are available, then call the Public Safety 36-2222.

# CONTINGENCY PLAN: SEVERED FIBER OPTIC CABLE

There is minimal risk that fiber optic cables within the concrete-protected conduit system could be damaged, but with the consideration of construction projects, the possibility exists. A more likely scenario exists that fiber optic cabling within a building could be damaged. The information below includes background and contact information.

**Responsibility**: William Cox, Manager, Technical Services

## Topology and Signal Duct/Conduit System

The campus network topology is a star with Hilltop and Schofield Hall each being a hub. Hilltop and Schofield Hall are inter-connected by large fiber bundles with redundant paths to each building. The conduit system and fiber optic cable routes are the responsibility of Facilities Planning & Management. Tom Kazmierski 836-5279 is the Facilities contact person who coordinates activities related to the conduit system. A signal duct survey was completed in 2005 which documents all the contents of the conduit system. The documentation is available on the network.

## Splice Existing Fiber

Each fiber optic cable has at least 15 feet of cable on each end. In addition to Michels Communications (contact information below), the splicing operation could be contracted with local vendors. The “pull back” could require significant power and fiber cable can become very rigid with the passage of time. If splicing is a permanent fix, a maintenance hole or pedestal would be needed for access to the splice.

## String Fiber on the Ground

On an emergency basis, fiber optic cable could be placed above ground until repairs could be arranged. There are several local contractors who may have a supply of fiber that could be used on an emergency basis. Delivery of fiber optic cable can require several weeks of lead time from vendors such as Viking Electric or Anixter.

## Wireless

Wireless Ethernet provides the option of connecting any building on campus as a temporary fix in order to bring network communications back up. As long as line of sight is available, a deployment similar to the Towers to Bollinger Field is possible. Cisco can provide wireless products on an emergency basis. In an emergency, classrooms should get the highest priority for wireless bandwidth use.

## Contact Information

### Fiber Repair Emergency Contact:

Jerrod Henschel, Senior Manager
Michels Communications
817 West Main Street, Brownsville, WI 53006
Phone (920) 583-3132
Fax (920) 583-3429
Cell (920) 948-2575

### Fiber Repair Campus Contact:

Joel Jensen 836-2654 LTS

### Contact Call List

| | | |
|---|---|---|
| First call: | William Cox | Office 836-5931 \| Home: 597-2396 |
| Alternate 1: | Phil Staff | Office 836-3894 \| Home: 832-3971 |
| Alternate 2: | Daren Bauer | Office 836-5286 \| Cell: 715 225-1449 |

# CONTINGENCY PLAN: SEVERED TELEPHONE CABLE

Follow this contingency plan if a telephone cable bundle is severed somewhere on campus. The risk of this is minimized since these bundles are inside the concrete-protected conduit system on campus.

**Responsibility**: William Cox, Manager, Technical Services

## Splice Existing Copper

The splicing operation should be contracted with AT&T. AT&T installed all of the copper to the buildings so they have the campus maps and schematics (Telephone Services has these maps also). Splicing a copper cable containing several hundreds of copper wires is not a trivial job. If splicing is a permanent fix, a maintenance hole or pedestal would be needed for access to the splice.

AT&T Contact: 877 8888-5622 (this same number is used to report campus problems with phones to A&T).

## String Copper on the Ground

On an emergency basis, copper cable could be placed above ground until repairs could be arranged. AT&T would be the vendor of choice for this type of work, however, local contractors may have the expertise and materials needed for the job. See above AT&T contact number.

## Wireless

Wireless ethernet provides the option of connecting any building on campus. IP telephones could be used in an emergency, however, acquisition of IP phones and setup time may make this option difficult. Cell phones may be considered as a more practical solution to a short term outage.

### Contact Call List

| | | |
|---|---|---|
| First call: | William Cox | Office 836-5931 \| Home: 597-2396 |
| Alternate 1: | Nancy Revak | Office 836-5262 \| Home: 835-4156 |
| Alternate 2: | Daren Bauer | Office 836-5286 \| Cell: 715 225-1449 |

# CONTINGENCY PLAN: SEVERED TELEPHONE CABLE TO CENTRAL OFFICE

The telephone cables (copper and fiber) that connect the campus phones to the central office are owned by AT& and should the cables be damaged, they are the responsibility of AT&T. AT&T has procedures in place to declare a disaster and insure that service is returned as quickly as possible.

**Responsibility**: William Cox, Manager, Technical Services

## Service Outage Lasting a Day

Wait for service to be returned.

## Service Outage Lasting Several Days

Cell phones would be a practical solution to a short-term outage. Because the outage would be the direct responsibility of AT&T for repair, it would be reasonable to request temporary cell phone support from AT&T.

Cell phones are owned by many individuals and in an emergency, Telephone Services could develop an emergency calling list of cell phone numbers and post the list on the LTS web site.

IP telephones over the data network could be used in an emergency. The IP phone users would be minimally affected by the phone cable to the central office being severed as backup calling is supported by the Eau Claire Areas Schools over the CINC fiber network.

### Contact Call List

**AT&T Contact:** 877 8888-5622
This same number is used to report campus problems with phones to AT&T.

| | | |
|---|---|---|
| First call: | William Cox | Office 836-5931 \| Home: 597-2396 |
| Alternate 1: | Nancy Revak | Office 836-5262 \| Home: 835-4156 |
| Alternate 2: | Daren Bauer | Office 836-5286 \| Cell: 715 225-1449 |

# CONTINGENCY PLAN: WORK STOPPAGE

This procedure is to be followed if normal operations are disrupted by a work stoppage of any kind, such as a strike.

Any type of work stoppage is illegal by State of Wisconsin Statute. All employees will be expected to comply with the law and report to work. Employees who refuse to work, abandon their posts before being relieved, or participate in a work disruption are subject to standard disciplinary processes. Learning and Technology Services will continue to function to ensure all services normally provided to the University will not be interrupted.

**Responsibility**: Crag Mey, Director of LTS

## Reassignment of Duties

An employee may be temporarily assigned work that is not normally performed by that employee. The assignment may be within the department or in another department in the University depending on need.

## Vacation

It will be determined on an individual basis whether an employee who is already on vacation shall be recalled, or if an employee has already scheduled to take vacation during the emergency shall be permitted to do so. No new vacations will be approved for any employee until the emergency is concluded.

## Sick Leave

Any employee wishing to use sick leave during the emergency will be required to provide a doctor's statement confirming the illness or injury.

## Crossing Picket Lines

Any employee who refuses to come to work because of fear of crossing picket lines shall immediately contact her/his supervisor. University procedures outlined for the particular emergency will define the method to get the employee to work safely.

# DISASTER AVOIDANCE PLAN

The best Disaster Plan is to plan for disaster avoidance through each step of IT development. Listed below are disaster avoidance plans (and completed projects) which should be implemented and used by LTS as standards.

**Responsibility**: William Cox, Manager, Technical Services

## Backup Power Generators and UPS

Each building on campus (excluding Res Halls) has or will soon have a power generator for emergency power. A building level UPS is the standard for LTS electronics located in IDFs. Were VOIP is be deployed, in addition to building level UPSs, power over Ethernet (PoE) switches are deployed so IP phones can make calls when loss of power to the building occurs.

S 6 has redundant UPSs which have been documented by Technical Services in *S6 Redundant UPSs*. For more information, contact William Cox.

## Redundancy and Standardized Hardware

Identify single points of failure and implement redundancy. High availability is the standard for all network and server deployment. In addition to redundant components within servers, application failover from server to server is the standard (i.e. Cisco Call Manager will not go down with the hardware failure of one server).

Dell Servers and Cisco electronics minimize the potential for finger pointing with hardware failures. Implement fault tolerance and redundancy in critical components.

The standards established for server and data integrity have been documented by Technical Services in *Server and Data Integrity*. For more information, contact William Cox.

Network and server standards have been documented by Technical Services in *Understanding the UWEC Network*. For more information, contact William Cox.

## Back Up System, Applications and Data

The implementation of storage solutions located in Library 5015 provides a backup capability away from the servers being backed up.

This process has been documented by Technical Services in *Server Backups* and *Email Backup and Retention*. For more information, contact William Cox.