Utilities Management Plan

SAFETY POLICY MANUAL SECTION 7.0

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I. Introduction:

Robert Morris University is committed to the development and administration of a comprehensive Utilities Management Plan. The purpose of this plan is to provide the basis for a safe, consistent and comfortable environment for the University students, faculty, staff, and visitors through the continuous evaluation, improvement and maintenance of utilities systems.

This plan establishes the foundation for a comprehensive utility management program at Robert Morris University. In addition, this plan establishes a formal organizational structure designed to facilitate the achievement of utility management goals and objectives.

II. Goals:

The utility systems management mission is consistent with and supports the larger overall missions of Robert Morris University through the development, promotion, and subsequent implementation of a proactive Utilities Management Plan. The short-term program goal is to document all utility systems including identifying and inventorying critical components and evaluate and assess the condition and the effective reliability of the utilities systems across campus and compile information gathered in a format that can be effectively utilized by all responsible departments. In a broader sense, the long-term program goal is to develop a comprehensive utilities management plan that includes practices and procedures including a comprehensive preventive maintenance program that insures the safe, reliable, and efficient use of utilities and maximizes the life expectancy of the systems' equipment and components. The plan shall benchmark Robert Morris University as a leader in utilities management.

III. Objective:

The utilities management plan was developed to coordinate an effective process that is based on organizational experience, applicable rules and regulations, and accepted practice. This includes maintaining a safe physical environment, minimizing risks of utility failures and ensuring operational reliability of utility systems. The short-term goal is achieved and monitored by existing files, drawings, catalogs & records; by performing field verification of utilities; and by seeking information from utility providers, vendors, equipment manufacturers, & facility personnel. Short-term performance is monitored by the compilation of information gathered in the form of drawings, files, tables, listings, and notebooks for the active use of all responsible departments. Long-term program performance may be monitored in the improved reliability of utility services and increase life expectancy of equipment and components and corrective actions including preventive maintenance frequency may be implemented to ensure performance is met.

IV. Scope:

The scope of this plan applies to all facilities and utility systems located at the Moon Campus, Island Sports Center and other facilities operated by the University. All utilities, areas serviced by these utilities and outside service providers are included in the general scope of this plan.

V. Codes, Standards & Regulatory Requirements:

The utility management plan has been designed to ensure compliance with all federal, state, and local safety requirements and generally accepted practices. These requirements include, but are not limited to the Occupational Safety and Health Administration (OSHA), the State of Pennsylvania Department of Labor, and the municipalities adopted versions of the Building Officials and Code administrators (BOCA), National Electric Code (NEC), International Electrical Testing Association (interNETA), and the National Fire Protection Association (NFPA) codes.

VI. Organizational Roles and Responsibilities:

A. To ensure that we meet the Utility Systems Management goals and objectives, the director of maintenance is to facilitate development, implementation and monitoring of activities related to the plan. The maintenance department is responsible for, but are not limited to:

1. Develop, maintain, and update a management plan.

2. Develop, maintain, and update policies & procedures. These policies & procedures will reflect the needs of all affected locations and departments to develop a comprehensive policy/procedure.

3. Develop, maintain, and update a training program for line personnel, users, and/or maintenance personnel to ensure these people know what to do if a problem occurs in the field.

4. Develop, maintain, and update a University wide incident reporting program that records utility outages, interruptions, or failures and compiles said data collected for tracking, evaluating, and performance measuring purposes. Program should be tied in with existing Facilities Management work order system.

5. Evaluate the training program and ensure users know what do to during utility outages, interruptions, and failures.

6. Measure performance and conduct evaluations of the Utilities Systems Management Plan.

B. Department Responsibilities:

The Facilities Management Department has been assigned responsibility for the development and administration of the bulk of the utilities management implementation policies & procedures identified in this plan. However, several other departments have also been assigned staff responsibility for the development and administration for specific utility management implementation programs. These specific programs and the responsible departments are identified below:

1. Facilities Management

   a) All power, gas and fluid utilities

   b) Heating and ventilation systems

   c) Utility emergency plans

   d) Preventative maintenance program

   e) Incident reporting program

   f) Work order program

   g) Drawing/specification management program

2. Material Management

   a) Off hour product/service acquisition program

   b) Disaster product/service acquisition program

3. IS & Telecommunication

   a) Whole house telecommunications system and telephones

   b) University computer systems

VII. Implementation Programs & Guidelines

The following implementation programs will be established as part of a comprehensive Utilities Systems Management Plan:

A. Promote a safe controlled comfortable environment of care.

This is accomplished by providing well maintained and good operating systems which have been properly installed and periodically tested and monitored.

B. Reduce the potential for acquired illness.

This is accomplished by providing clean drinking water and controlling legionella and producing clean air and comfortable conditions for the intended building use.

C. Assess and minimize risk of utility failures;

This is accomplished through a good preventive maintenance program, conducting routine (daily/weekly/monthly/semiannual/annual) rounds throughout the University and having a control system (where appropriate) that continuously monitors the utility equipment and systems.

D. Ensure operational reliability of utility system by monitoring preventive maintenance programs implemented, utility back-up system performance, etc…

A failure plan will be developed for each utility to provide an alternate supply.

E. Establishing criteria for identifying, evaluating, and taking inventory of critical operating components of systems to be included in the utility management program. Criteria developed will address the impact on the following system: life/fire safety, environmental support, equipment-support and communication;

At Robert Morris University, all utility systems are covered in the Utilities Management Plan and include:

- Electrical Power
- Emergency Power
- Fire Alarm and Fire Suppression System
- Elevators
- HVAC Systems
- Domestic Water
- Plumbing System
- Sewer Systems (Sanitary & Storm Water)
- Piped Gases and Vacuum Systems
- Communication Systems
- Computer/Data Systems

F. Maintaining strategies for all critical components in the inventory;

An inventory list of critical components being upgraded as equipment is removed or added. Each piece of equipment is assigned a number and included in the Preventive Maintenance Program. ***(See G.)***

G. Inspecting, testing and maintaining critical operating components;

The Preventative Maintenance Program and routine testing includes all facility support equipment at the University. Equipment will be identified by location, unique identification number and type. Preventive maintenance protocols and intervals are based on manufactures recommendations, regulatory requirements and institutional experience. Inspection, testing and similar preventative maintenance reports are reviewed by the appropriate department to ensure issues are properly addressed.

H. Testing piped gas systems when the systems are installed, modified, or repaired including cross- connection testing, piping purity testing and pressure testing;

All gas systems are fully tested by manufacturer's guidelines when they are installed, modified or repaired. This testing includes cross-connection testing, piping purity testing and pressure testing. Testing is performed by a certified inspector and is documented when old systems are modified or repaired or new system installed. No systems are utilized until testing is complete and approved by the Facilities/Construction Management Department staff.

I. Maintaining the main supply valve and area shut off valves of piped gas systems accessible and clearly labeled.

All gas shutoff valves will be marked with gas being distributed, the areas that they serve and pressures they operate. In addition, there is a shutdown procedure for oxygen in case of emergency/fire.

J. Installing and maintaining appropriate pressure relationships, air exchange rates, and filtration efficiencies for ventilation systems;

All ventilation systems in specialty designed areas are fully tested according to manufactures guidelines when they are installed, modified or repaired as required by manufactures recommendations. Testing is also documented for all appropriated areas as part of the preventative maintenance program. This testing includes as appropriate: pressure relationships, air exchange rate and filtration efficiencies. These specialty designs include:

- Specialty rooms
- Laboratories/hoods

K. Developing and maintaining current utility system operational plans to help ensure reliability, minimize risks, and reduce failures;

All operational plans are developed and maintained in the Facilities Management Department; these plans serve to help insure reliability and minimize risks and reduce failure. The following is a partial list of some of these plans: electrical, natural gas, specialty/lab gas and vacuum, domestic water, boilers, and HVAC. These plans include emergency phone numbers and contractors that are available to assist if the need should arise. The Facilities Management Department also has files and manuals that are kept in the office to assist and instruct. A Policy & Procedure Manual will be published and made available to assist in instruction and education.

L. Mapping the distribution of utility systems and labeling controls for a partial complete emergency shutdown.

Current and complete drawings of all utility systems will be maintained in the Facilities Management Department. Utility shut downs are conducted by the Facilities Management Department at each

campus for all utilities. The shutdowns include processes for notification of the area affected and to other concerned areas such as Administration, Faculty, Management, and Public Safety. These drawings are maintained on our computer software GIS Mapping System (ArcGIS)

M. Investigating utility systems management problems, failures, or user errors and reporting incidents and corrective actions.

Investigation and notification procedures are described in the Policy & Procedure Manual maintained in the Facilities Management Department. After normal business hours *(second, third shifts and weekends),* problems may be routed to the appropriate manager on-call. Any failure of a utility system is investigated promptly by the Facilities Management Department and corrective action is taken as soon as possible.

N. Ongoing monitoring of performance;

Performance measures are selected to monitor actual and/or potential risks related to one or more of the following issues, staff knowledge and skills, monitoring and inspection activity, emergency procedure and incident reporting, level of staff participation, and inspection, preventive maintenance and testing equipment. The following performance measures have been selected:

- Documentation of bulk utility systems at all campus.
- An evaluation of the electrical distribution system and a proposed capital improvement program to upgrade, replace, or repair defective equipment identified to improve reliability and safety.
- An evaluation of the HVAC systems and a proposed capital improvement program to upgrade, replace, or repair defective equipment identified to improve reliability and safety.
- Document utility failures, interruptions, and outages along with known failures, interruptions, and outages of back-up utility systems (e.g. Emergency generators) to provide a base-line for future performance measurements.

O. Emergency procedures for utility system disruptions or failure;

The Facilities Management Department will establish procedures to be followed that address the following issues:

- Procedures in the event of utility systems malfunction
- Identification of an alternative source of essential utilities
- Shutoff of malfunctioning systems and notification of staff in affected areas
- Obtaining repair services

P. Annual Evaluation;

The Utility Management Plan will be evaluated annually by the Facilities Management Department and IT. The reviewed document will be submitted to the University Safety Committee for approval. The goal(s) objectives, scope, performance and effectiveness of the overall program will be assessed, by utilizing at least one of the following: staff knowledge and skills, monitoring and inspection activity, emergency procedures and incident reporting, level of staff participation, and inspection, preventive maintenance and testing of equipment.

VIII. Orientation and Education Program:

University personnel will receive training/education on aspects of the Utilities Management Plan. Training/education may be provided during new employee orientation, on the job training,

as new tasks assigned, and/or as determined necessary. Employees receive training during new employee orientation and during their mandatory annual safety training. Training may be coordinated by Human Resources in collaboration with staff from Facilities Management. Training may be provided through multiple training/education tools including, lectures, presentations, computer based, self study/learning packets, hands on, and similar tools. The education presented will include at least:

- Processes for reporting utility system management problems, failures, and/or user errors

Employees receive department specific safety training from their department manager. This includes job specific safety hazards. Facilities Management department level users/maintainers begin with in service education provided through University education before the employee enter the work force. Individual training at the department level begins with pairing new staff with knowledgeable peers and lead persons followed by review of the department Policy & Procedure Manual which details emergency procedures during utility failures. Based on information provided by staff involved in the training and orientation, the supervisor determines the need for additional training and orientation, education will include at least:

- Utility systems capabilities, limitations and special applications
- Emergency procedures in the event of system failure
- Information and skills necessary to perform assigned maintenance responsibilities

IX. Information, Collection and Evaluation System:

When required, reports will be prepared and be submitted to the University Leadership and University Safety Committee as requested. These reports will include but not be limited to a summary of the following: the status of program effectiveness as measured by the performance standard; risks not anticipated in the original management plan design; the need for additional resources to accomplish the program goals and objectives; and identified problems, needs, opportunities and proposed solutions for correction of identified program deficiencies.

X. Utilities Management Program Documentation:

This plan and the associated implementation programs are available on the Safety Web Page (www.rmu.edu/safety). These documents are contained in Section 7.0 of the RMU - Safety Policy Manual.