

Maintenance Management Policy

EN-MPS-710

Revision 0

Approved by 

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McMurdo, Palmer, and South Pole Stations

Active Divisions/Departments

FEMC

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Purpose

This policy describes FEMCs maintenance responsibility for facilities, systems, and equipment. The policy describes when maintenance is required and how it is performed. It also defines the terms used, describes the decision making process governing the assignment of maintenance priorities, the selection of cost analysis processes, and quality assurance.

Scope/Applicability

This maintenance management policy applies to all FEMC personnel and other divisional personnel who perform maintenance.

Terms and Definitions

Capital Equipment

Any property item that has an acquisition cost of \$25,000 or more and an expected life of two or more years (e.g., trucks, cranes, loaders, and bulldozers).

Condition Assessment Survey

Periodic inspections of facilities, systems, or equipment used to determine their current condition and any estimated cost to correct deficiencies.

Controlled Capital Equipment

Any property item below the \$5,000 threshold that is susceptible to loss or theft because it is easily convertible to personal use or resale. The NSF has designated computer equipment, communications equipment such as cameras, printers, and scanners as controlled capital equipment. RPSC Divisions can add equipment to the controlled equipment list.

Corrective Maintenance

Maintenance activities performed because of equipment or system failure. Activities are directed toward the restoration of an item to a specified level of performance.

Emergency Maintenance

Maintenance required to be performed immediately to prevent further failures, or catastrophic impacts, or loss to facilities or equipment, or impacts life sustaining equipment.

Deferred Maintenance

1) Any scheduled maintenance that is not performed on schedule, unless it is determined from the material condition of the equipment that the scheduled maintenance does not have to be performed until the next scheduled maintenance. 2) Any non-scheduled maintenance that would render the property or equipment non-operational and is not scheduled and performed in a reasonable time. In either case, circumstances such as, but not limited to, non-availability of parts or funding would be considered reasons for reporting the maintenance as deferred.

Life Cycle Costing

The concept of analyzing future costs when comparing initial investment costs using all costs incurred to buy, operate, and maintain a facility, equipment, or system over its life expectancy or period of ownership.

Maintenance

Maintenance is the act of keeping assets in acceptable condition or at a prescribed level of performance. It includes preventive maintenance, other types of maintenance, and replacement of parts or components and other activities needed to preserve the asset so that it continues to provide acceptable services and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than, those originally intended.

Operations & Maintenance (O&M) Costs

The total cost associated with the day-to-day operation and maintenance of a facility, system, or equipment. It includes all maintenance and repair (both fixed and variable), administrative costs, labor costs, and utility costs if applicable. It **does not** include janitorial, housekeeping, and other cleaning costs, or costs associated with the roadways and grounds.

Planned Maintenance

Scheduled projects necessary to arrest deterioration or restore facilities or equipment.

Preventive Maintenance (PM)

Programs of scheduled maintenance activities that extend the serviceable life of facilities, equipment, and systems and reduce breakdowns and repairs. It includes inspection, lubrication, adjustment, replacement of components, performance and compliance testing, and analysis. These activities are often based on manufacturer recommendations.

Real Property Installed Equipment (RPIE)

Equipment that is an integral part of real property necessary for the property to be functional (permanent fixtures) and if removed would eliminate or reduce the functionality.

Risk Management

The processes of making decisions that reduce or minimize the adverse effects of accidental loss.

Routine Maintenance

Unscheduled, day-to-day repairs that should be accomplished quickly to restore facilities, equipment, or systems to operation.

Value Engineering

Evaluation of construction methods or materials to determine which have the net result of reducing costs, consistent with specified performance, maintainability, aesthetics, safety, and security criteria.

Responsibilities

Director and Managers or their designees, FEMC

Ensures that FEMC personnel performing maintenance follow this policy.

FEMCs Maintenance Philosophy

The USAPs Antarctic stations and research vessels represent a significant ongoing financial commitment. FEMC will work in partnership with the NSF to preserve USAP assets in acceptable condition and to develop sustainable solutions to issues of infrastructure deterioration while continuing to implement phased improvements within the USAPs fiscal abilities.

General

Establishment of Preventive Maintenance Intervals

The appropriate division, based on the category of equipment or expertise required, shall maintain all repairable or non-consumable equipment controlled by RPSC. Preventive Maintenance schedules shall be developed and maintained. If the equipment is new to the inventory, manufacturer's recommendations for extreme environments should be used. If similar equipment exists on station, the maintenance organization has the option of using industry standards (Means) or corporate experience based on historical maintenance information or manufacturers suggestions.

Use of the Computerized Maintenance Management System (MAPCON)

For FEMC, all equipment requiring maintenance or for tracking purposes will be listed in MAPCON.

Spare Parts

At the time of procurement of a new piece of equipment requiring maintenance, consumable and manufacturer recommended spares in sufficient quantities to initially support the equipment will be ordered. Unless the equipment already exists in the inventory, a one-year supply of spares will be procured by the purchasing work center. If the equipment does exist in inventory, then the equipment spare parts inventory should be reviewed and spares ordered as deemed necessary.

Condition Assessment Surveys and Life Cycle Costing

When an asset, having an anticipated replacement cost of more than \$25,000 dollars approaches the end of its life-cycle, or is at a stage that major maintenance or renovation is required, or required maintenance may be delayed, a condition assessment survey or a life cycle analysis shall be performed. The results of the survey or analysis should be compared to the replacement costs and expected future maintenance costs. If the result of the survey or analysis reflect a net saving of one alternative (maintenance or replacement) over another, then the lower cost alternative should be recommended. Specifically for facilities, alternative for renovations or replacements shall use value-engineering techniques (See *Value Engineering Designs* procedure (EN-D-202)) for identifying the preferred alternative.

Deferred Maintenance

Deferred maintenance results in higher long-term costs. This higher cost is due to the cost of the repair being higher than if regular maintenance had been performed at appropriate points in the life cycle of the equipment. In addition, when maintenance is deferred, the life cycle of the equipment is decreased and complete reconstruction may be necessary at an earlier date resulting in additional costs. As such, RPSC divisions performing maintenance shall avoid deferred maintenance as a management solution to program constraints without NSF concurrence or unless the impact on the life expectancy or life cycle of the asset is documented to be minimal. Documentation of deferred maintenance shall be reported at the end of each fiscal year to the NSF.

Should deferred maintenance be required, equipment assets should be taken out of service, if possible. Facilities subjected to deferred maintenance should be routinely monitored for indications of accelerated deterioration of life safety issues.

References

Value Engineering Designs (EN-D-202)

Records

This procedure generates no records.