

Establishing a Condition-Based Maintenance program for Buildings and Facilities

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ABSTRACT

The National Institutes of Health is the Federal focal point for medical research in the United States. On the main campus in Bethesda, MD, some 20,000 doctors, researchers, and scientists work in over 60 buildings to advance the state of medical knowledge and research.

The Building Maintenance Team (BMT) provides operation and maintenance support to the Division of Property Management for the care of all campus buildings. This includes routine and emergency maintenance on electrical, mechanical, structural including utilities and a vast distribution system for steam, chilled water and compressed air from a main plant on campus. Critical environments include Bio-hazard Level 3 and 4 facilities, animal facilities, and patient care units. Over the last 6 years, the BMU has partnered with the Naval Sea Logistics Center (NAVSEA) to provide program support, diagnostic technologies, and expertise to transition from a reactive maintenance environment to a strategic Condition-Based Maintenance (CBM) program.

Efforts to date include vibration analysis, infrared thermography, lubricant analysis, motor circuit analysis, ultrasonic leak detection, and electrical testing. Training has also been a significant aspect of the program, providing level-of-awareness classes for the diagnostic technologies and maintenance strategies, and targeted pro-active maintenance workshops in the use of maintenance tools such as laser alignment and steam trap leak detection.

Key equipment included in the program are pumps, exhaust fans, air handling units, electrical distribution systems, and steam systems. The program has demonstrated improvements in equipment reliability and reduction of recurring failures. By identifying improper equipment installation, design issues, and root-causes of failures, the BMU Team has been able to address underlying equipment deficiencies, and allow the NIH to fulfill their mission for Public Health.

If you are interested in reading the entire white paper, please reach out to rjanosky@mrgcorp.com to receive the full document.