About WEF

Formed in 1928, the Water Environment Federation (WEF) is a not-for-profit technical and educational organization with 32,000 individual members and 80 affiliated Member Associations representing an additional 50,000 water quality professionals throughout the world. WEF and its member associations proudly work to achieve our mission of preserving and enhancing the global water environment.

For information on membership, publications, and conferences, contact

Water Environment Federation
601 Wythe Street
Alexandria, VA 22314-1994 USA
(703) 684-2400
http://www.wef.org

IMPORTANT NOTICE

The material presented in this publication has been prepared in accordance with generally recognized engineering principles and practices and is for general information only. This information should not be used without first securing competent advice with respect to its suitability for any general or specific application.

The contents of this publication are not intended to be a standard of the Water Environment Federation (WEF) and are not intended for use as a reference in purchase specifications, contracts, regulations, statutes, or any other legal document.

No reference made in this publication to any specific method, product, process, or service constitutes or implies an endorsement, recommendation, or warranty thereof by WEF.

WEF makes no representation or warranty of any kind, whether expressed or
implied, concerning the accuracy, product, or process discussed in this publication and assumes no liability.

Anyone using this information assumes all liability arising from such use, including but not limited to infringement of any patent or patents.

Copyright © 2007 by the Water Environment Federation
All Rights Reserved.

Water Environment Research, WEF, and WEFTEC are registered trademarks of the Water Environment Federation.
Manuals of Practice of the Water Environment Federation

The WEF Technical Practice Committee (formerly the Committee on Sewage and Industrial Wastes Practice of the Federation of Sewage and Industrial Wastes Associations) was created by the Federation Board of Control on October 11, 1941. The primary function of the Committee is to originate and produce, through appropriate subcommittees, special publications dealing with technical aspects of the broad interests of the Federation. These publications are intended to provide background information through a review of technical practices and detailed procedures that research and experience have shown to be functional and practical.

Water Environment Federation Technical Practice Committee Control Group

B. G. Jones, Chair
J. A. Brown, Vice-Chair

S. Biesterfeld-Innerebner
R. Fernandez
S. S. Jeyanayagam
Z. Li
M. D. Nelson
S. Rangarajan
E. P. Rothstein
A. T. Sandy
A. K. Umble
T. O. Williams
J. Witherspoon
Chapter 6 Management Information Systems—Reports and Records

Introduction

Management Information Systems

Typical Software Applications

Computerized Maintenance Management System (CMMS)
Geographic Information System (GIS)
Laboratory Information Management System (LIMS)
Human Resources Management System (HRMS)
Financial Information Systems (FIS)
Process Control System/Supervisory Control and Data Acquisition (PCS/SCADA).

Personal Productivity Applications

Collaboration Software

Other Support Systems

Information Technology Governance

Planning and Organizing

Acquisition and Implementation

Delivery and Support

Service Level Management

Training
Ongoing Technology Management

System Maintenance

Security

Monitoring

Types of Records

Physical Plant Records

Record Drawings

Operation and Maintenance (O&M) Manual

Manufacturers’ Literature

Equipment Description

Specifications

Design Engineer’s Report

Compliance Reports

National Pollutant Discharge Elimination System Monitoring Reports

Wasteload Management and Projection Reports

Pretreatment Program Reports and Records

Toxic Reduction Evaluation Records

Risk Management Program Reporting

CMOM Compliance Reporting
Air Pollution Control Permit Reporting

Records of Operation

Daily Operating Records

Weekly and Monthly Operating Records

Laboratory Records

Industrial Waste Management Records

Relating Wastewater Recordkeeping to Operation

Energy Management

Preventive and Corrective Maintenance Records

Predictive Maintenance Records

Equipment Record System

Schedule of Maintenance

Storeroom and Inventory System

Budgets and Maintenance Costs

Administrative Reports

Annual Operating Reports

Insurance Coverage

Annual Budget

Annual Audit Report
Personnel Training Records

Budgets and Cost Accounting Records

Payment of Bills

Periodic Reporting

Emergency Response Records

Disaster Recovery—Preservation of Records

References
LIST OF TABLES

6.1 Topics an operations and maintenance manual should cover
6.2 Example of expenditure categories
6.3 Sample format for comparing revenues and expenditures to budgeted amounts
6.4 Distribution of records
LIST OF FIGURES

6.1 An integrated system makes data available across systems
6.2 Report form for wastewater treatment plant miscellaneous data
6.3 Report form for wastewater treatment plant primary treatment data
6.4 Report form for wastewater treatment plant trickling filter data
6.5 Report form for wastewater treatment plant activated-sludge
6.6 Report form for wastewater treatment plant anaerobic digester and sludge data
6.7 Report form for wastewater treatment plant aerobic digester and sludge data
6.8 Sample work order form
6.9 Sample motor service record—form 1
6.10 Sample motor service record—form 2
6.11 Sample equipment record card
Preface

This sixth edition of this chapter was produced under the direction of Michael D. Nelson, Chair. The principal authors of this chapter are Melanie Rettie and Michael W. Sweeney, Ph.D., P.E..

Wastewater utilities rely on vast amounts of historical, transactional and real-time information to efficiently operate and maintain various systems, to ensure compliance with regulations and to make informed decisions. Chapter 6 comprehensively explores the various areas comprising Information Management that are unique and vital to utilities and their customers. They include: operations, administration, laboratory, process control and record keeping and other functional area perspectives. While the entire chapter has been updated from the previous edition, risk management, regulation updates (i.e CMOM) and information technology integration and security are areas that have been expanded to reflect current requirements.

Authors' and reviewers' efforts were supported by the following organizations:

EMA, Inc., St. Paul, Minnesota and Louisville, Kentucky
Mike Nelson Consulting Services LLC, Churchville, Pennsylvania
Weston & Sampson Engineers, Inc., Peabody, Massachusetts