ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL

CAMDEN COUNTY MUNICIPAL UTILITIES AUTHORITY

CAMDEN, NEW JERSEY

Environmental Management System Manual
Camden County Municipal Utilities Authority

PREAMBLE and AUTHORIZATION

Camden County Municipal Utilities Authority (CCMUA) is committed to sustainable and responsible environmental management in all of our activities. This commitment is summarized in the CCMUA Sustainability Policy, which emphasizes continual improvement in our relations with interested parties, the quality of our products, protection of the environment and compliance with regulatory requirements. The CCMUA "Environmental Management System" (EMS) has been established in accordance with the ISO 14001 and National Biosolids Partnership requirements and will be maintained to help meet those commitments. This EMS Manual describes how the CCMUA EMS functions, including its requirements, procedures and responsibilities.

By signature below, the Executive Director authorizes the use of the CCMUA EMS in managing environmental performance at the Delaware 1 Water Pollution Control Facility and approves this version of the EMS Manual and its contents. Revisions to this manual may occur from time to time. Revisions require approval by the Executive Director or the EMS Team.

Authorized By: A.K.
CCMUA Executive Director

Effective Date: 6/14/18

Document Review and Revision Log

The following table summarizes reviews of this Environmental Management System (EMS) Manual and approval of changes in the manual.

Date	Section	Changes	Approval
February 7, 2013	All	Initial version – new Manual	
March 24, 2013	All	Update to match PDCA cycle	
May, 2015	All	Inclusion of the ISO 14001 EMS into the combined EMS manual	
January, 2017	All	Update the Manual to incorporate ISO 14001 manual. Update CCMUA Mission Statement (sec. 2.1)	
June, 2017	All	Review and update for conformity to ISO 14001:2015	
June, 2018	All	Complete upgrade to ISO 14001:2015	AK

CONTENT

1 INTRODUCTION

The Camden County Municipal Utilities Authority (CCMUA) "Environmental Management System" (EMS) provides a systematic approach for managing and continually improving environmental performance, product quality, regulatory compliance and relations with interested parties at the CCMUA Delaware 1 Water Pollution Control Facility.

1.1 Environmental Management System Scope

The CCMUA EMS applies to all activities at the Delaware 1 Water Pollution Control Facility in Camden New Jersey, used in collecting and treating wastewater and producing treated effluent and biosolids. These operations include wastewater pretreatment and collection; wastewater treatment, disinfection and discharged; biosolids preparation and handling, biosolids transportation, use and disposition.

The EMS Scope statement is available to interested parties upon request.

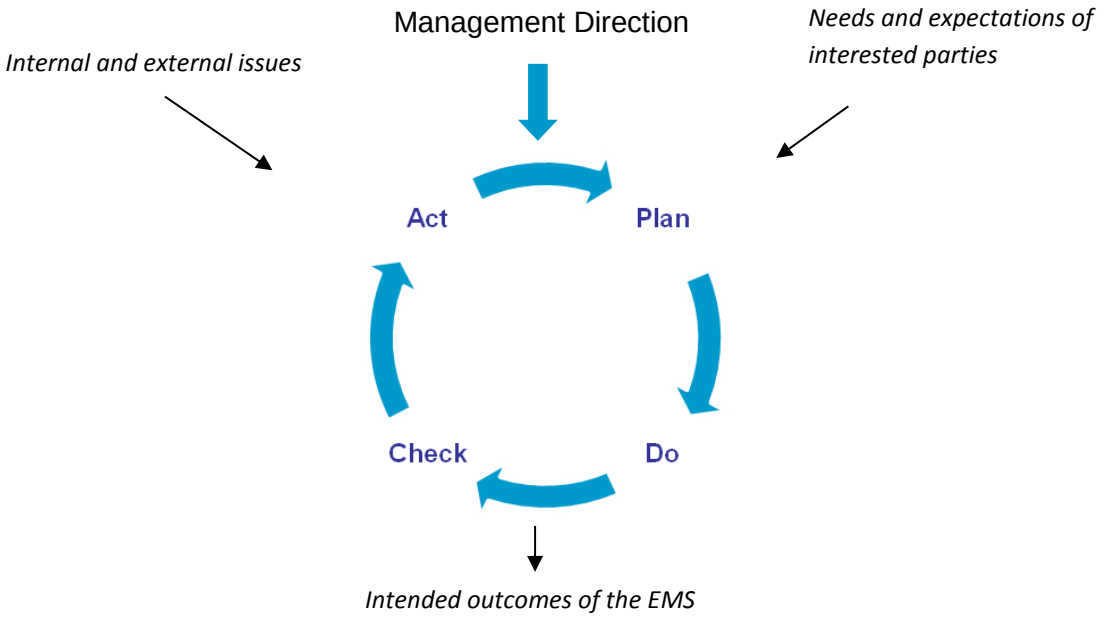
1.2 Planned Arrangements

The CCMUA Environmental Management System is intended to conform with requirements of the National Biosolids Partnership (NBP) Biosolids Management Program Elements (July 2011) and the ISO 14001:2015 International Standard. The BMP Elements consist of 17 individual management elements that must be addressed to develop a NBP Biosolids Management Program. The content and structure of the BMP Elements are similar to the ISO 14001 standard which provides a systematic approach, led by top managers, to improve its environmental performance while addressing risks and opportunities. The format of this manual combines the BMP's 17 elements with the ISO 14001 systems approach.

1.3 Overview of CCMUA Environmental Management System

The CCMUA "Environmental Management System" (EMS) is comprised of a series of processes that work together to achieve overall desired environmental performance results. The system is managed by focusing on how the processes function and interact to achieve the desired results, with emphasis on planning, implementation and checking to identify opportunities for continually improving the system and the results it produces.

The CCMUA EMS is designed to follow a Plan-Do-Check-Act (PDCA) cycle for continual improvement. This cycle is illustrated below.



The processes that apply to each part of this Plan-Do-Check-Act cycle are summarized below and match up with the corresponding BMP Elements. This manual is divided into separate chapters that describe the processes and their requirements that apply to each part. ISO 14001 requirements have been incorporated into the respective chapters.

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Management Direction

- Policy
- Organizational Context
- Environmental and Company Goals
- Roles, Responsibilities, Authorities
- Resources

Plan

- Legal and Other Requirements
- Risk Analysis
- Process flow
- Significant Environmental Aspects, Critical Control Points and Operational Controls
- Objectives, Targets and Action Plans
- Interested Party Participation

Do (Implementation & Support)

- Control of Operations (and Maintenance)
- Emergency Preparedness and Response
- External Communication
- Internal Communication
- Competency, Awareness and Training
- Control of Suppliers and Contractors
- Document Control and Recordkeeping

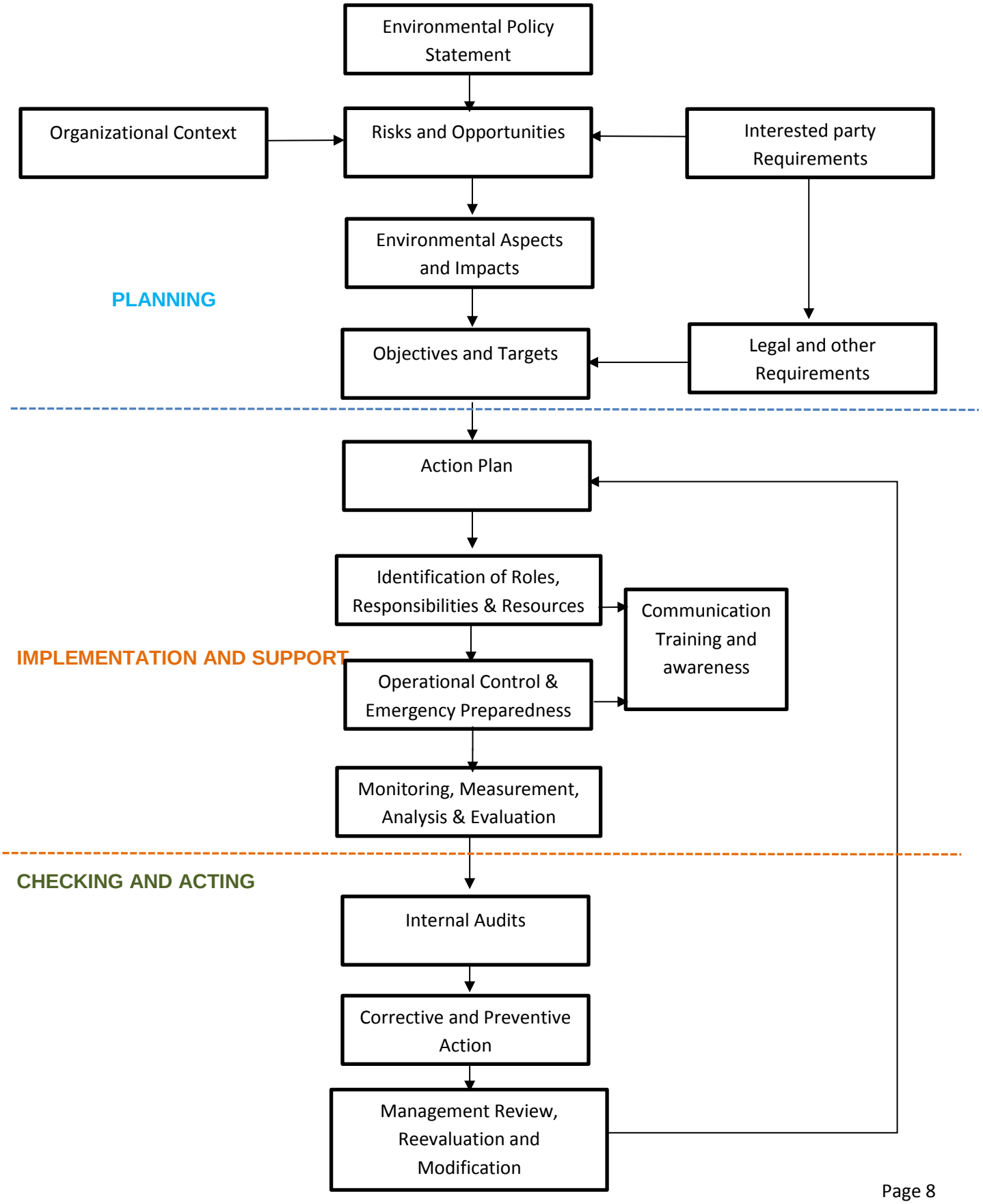
Check (Improvement)

- Monitoring, Measurement, Analysis and Evaluation
- Evaluation of Compliance
- Internal Audits
- Complaint Management
- Corrective and Preventive Action

Act (Improvement)

- Management Review
- Continual Improvement
- Maintenance and revision of the EMS

The flow plan below shows our general approach to implement, maintain and continually improve an effective Environmental Management System.



2 MANAGEMENT DIRECTION

Top management is ultimately responsible for environmental performance at the Delaware 1 Water Pollution Control Facility. The Executive Director endorses and provides direction for policies, goals and responsibilities for controlling our environmental risks and continually improving our environmental performance.

Purpose and Content

This Section of the EMS Manual outlines CCMUA management involvement in managing and directing our EMS activities. It includes the following:

- CCMUA- Mission and Environmental Policy
- Organizational Context
- Desired Results / Performance Goals
- Management Leadership
- Resource Requirements
- Roles and Responsibilities

2.1 CCMUA Mission and Environmental Policy

Mission Statement

The CCMUA is committed to protecting water quality, odor minimization, cost efficiency, minimizing carbon footprint and community service.

Environmental Policy

The following "Environmental Policy" applies to all operations at the CCMUA Delaware 1 Water Pollution Control Facility. All activities, products and services that CCMUA controls, or is expected to control, are required to be consistent with this Policy.

Camden County Municipal Utilities Authority is committed to being a responsible steward of our natural resources and continually improving the sustainability of our operations. We will do this by:

1. Optimizing water quality performance in order to protect the rivers and streams of Camden County.
2. Optimizing odor control performance in order to minimize adverse impact to our neighboring community.
3. Uphold the Code of Good Practice for biosolids developed by the National Biosolids Partnership (see appendix)
4. Maximizing cost efficiencies for the benefits of our ratepayers, without sacrificing environmental performance.
5. Reducing our carbon footprint, and our corresponding vulnerability, to climate change by increasing resiliency.
6. Community Service.

This Environmental Policy is posted prominently in our offices and operations so that employees and contractors who work onsite are aware of its commitments. It is available to any person upon request. Questions about this Policy should be directed to the Executive Director for response.

Each CCMUA manager is responsible for ensuring that activities under their control are performed in a manner consistent with this Sustainability Policy. All CCMUA employees and contractors who perform tasks on our behalf are expected to work in accordance with this policy.

2.2 Organizational Context

An understanding of internal and external issues or changing circumstances that can affect CCMUA operations and its EMS, either negatively or positively, are important considerations for effective planning. These issues are first and foremost the environmental impacts caused by CCMUA operations (see Section 3.3), local/regional environmental conditions that can affect the organization (i.e., extreme weather conditions and associated electrical outages, flooding; climate change) and compliance with regulatory requirements (see Section 3.2). The risks and opportunities associated with these issues that are a priority to address include:

- Adverse environmental impacts (e.g., water contamination, land contamination).
- Business interruption/facility shutdown (e.g., due to electrical outage, or flooding).
- Regulatory violations and fines.
- Complaints from the public.

These risks are addressed within the EMS by setting objectives, implementing operational controls, preparing for emergency situations, and evaluating our performance and compliance status.

Additional issues or changing circumstances that can pose risks and opportunities can arise from technological advances, interested party requirements (see Section 3.1), CCMUA's strategic direction, its financial position, social/cultural factors (such as an aging workforce) and its resource capability and capacity. CCMUA has determined the following are priority opportunities that address these issues:

- Pursuit of renewable energy sources (e.g., solar, sludge digestion, combined heat & power).
- Proactive community outreach (e.g., Camden Collaborative & SMART initiative.

Relevant information on these factors is determined by the EMS Team and the implications for the EMS are reviewed during the Management Review process (see Section 6.4).

Risks and opportunities associated with these factors are assessed and prioritized, commensurate with their importance and CCMUA's resource capacity as determined by the Executive Director. As a result, actions to mitigate the risks and leverage the opportunities are planned and documented within the EMS. Depending on the nature of the risk or opportunity, either the objectives/targets process, management of change process, operational controls or emergency preparedness and response plans are used to address and document the priority risk or opportunity.

2.3 Desired Results / Performance Goals and Objectives

The desired results of our EMS are stated in the CCMUA "Performance Goals" listed below.

1) Comply with all federal and state regulations, local permits and ordinances and other requirements to which we subscribe that apply to our activities and products.
2) Maintain constructive relations with the public, regulators and other stakeholders interested in CCMUA environmental management and biosolids programs.
3) Effectively control significant environmental risks associated with activities, products and services at the Delaware 1 Water Pollution Control Facility.
4) Continually improve the quality of wastewater and byproducts produced at the Delaware 1 Water Pollution Control Facility.

5) Achieve the objectives and targets set by management to improve our environmental performance.

The EMS Team reviews progress in achieving the above goals as a part of the Management Review process (see Section 6).

Additionally, CCMUA has developed environmental objectives that are consistent with its environmental policy, and clearly measurable, monitored and reviewed monthly. See Appendix, CC-P2 “Objectives and Targets Plan”. These objectives and targets are also evaluated to determine if they are appropriate indicators to achieve goals and objectives and are updated/revised as needed.

2.4 Management Leadership

CCMUA top management, represented by the Executive Director, provides visible support and leadership for ensuring the effectiveness of our Sustainability Policy. This leadership is demonstrated by:

- defining, establishing, implementing and maintaining our Sustainability Policy consistent with the CCMUA’s strategic direction and organizational context;
- approving the use of an Environmental Management System at CCMUA facilities;
- providing sufficient human resources, specialized skills, technology and financial resources to establish, implement, maintain and improve the EMS;
- communicating the importance of environmental management to employees, contractors and interested parties and promoting continual improvement;
- directing and supporting relevant roles to contribute to the effectiveness of the EMS and to integrate its requirements into their operations;
- ensuring that goals, objectives and targets are established for continually improving relations with interested parties and the sustainability of our operations;
- considering sustainability in long-term planning; and
- periodically reviewing the performance of our environmental management system and being accountable for the results.

2.5 EMS Team

The EMS Team is comprised of:

- Executive Director/Chief Engineer
- Director of Operations – Administration
- Chief Accountant
- Director of Operations and Maintenance (Wastewater)
- Director of Operations and Maintenance (Interceptors)

The EMS Team is an integral part of the CCMUA organization. See Appendix CC-P3, Organization Chart.

2.6 Resources

The CCMUA Board of Commissioners, assisted by the Executive Director and other CCMUA managers, determines resources needed to effectively manage our EMS and achieve the Desired Results / Performance Goals noted above. Needs for financial, technical and human resources are

periodically discussed at EMS Team meetings and Management Review meetings and recommendations are discussed at Board of Commissioners meetings.

2.7 Resources, Roles and Responsibilities

The Executive Director is ultimately accountable for environmental performance at the Delaware 1 Water Pollution Control Facility. To assist in these duties, the following key EMS roles and responsibilities have been delegated. Additional responsibilities are noted in the written description of EMS processes in this Manual.

Executive Director

The Executive Director:

- Is ultimately responsible to approve documents required under the EMS and ISO 14001 and National Biosolids Partnership.
- Prioritizes strategic risks and opportunities that can affect the organization and its EMS.
- Maintains knowledge and understanding of the compliance status of Delaware No. 1 WPCF.
- Takes action to ensure that up to date and effective written plans are in place for controlling and responding to emergencies that can cause significant environmental impacts at the Delaware No. 1 WPCF.

EMS Team

To assist in carrying out top management duties, the Executive Director appoints an" EMS Team" with responsibility and authority to:

- Ensure the EMS is established, implemented, maintained, integrated into business processes and continually improved.
- Determine criteria and methods to ensure that the EMS functions effectively including methods needed to control environmental risks, ensure product quality and legal and other requirements to meet and achieve objectives for improvement.
- Evaluate and report to top management on performance of the EMS in achieving its desired results.
- Define and communicate responsibilities and authorities to facilitate effective environmental management.
- Ensure that planning of environmental management activities supports the CCMUA Sustainability Policy.
- Promote awareness of the CCMUA Sustainability Policy.
- Define training requirements for the EMS especially after any change or improvement or the management system.
- Plan, conduct and monitor emergency tests at least annually.
- Develop an internal audit program and monitor its implementation.
- Retain records of planned and completed corrective/preventive action and periodically analyze these records to determine trends and possible deeper causes of problems that need to be corrected.

Operations and Maintenance Director

The Operations and Maintenance Director, assisted as necessary by the Assistant Operations and Maintenance Director, has the following responsibilities within our EMS:

- Ensure operations function in a way that is consistent with commitments made in our Sustainability Policy.
- Integrating environmental requirements into the operation of the Delaware No. 1 WPCF.
- Take action to achieve our environmental performance goals, objectives and targets that apply to operations and maintenance.
- Ensure personnel who operate and maintain equipment, including contractors, are competent in performing their duties.
- Maintenance of all compliance records and compliance reporting.
- Maintain knowledge and understanding of the compliance status of Delaware No. 1 WPCF.

Department Managers

All Managers are responsible for:

- Creating documents in accordance with their area of responsibility and involvement in the EMS.
- Integrating environmental requirements into their business processes.
- Immediately correcting an identified problem which is not systemic and does not require further investigation or action.

Regulatory Compliance Officer

The Regulatory Compliance Officer has the following responsibilities within our EMS:

- Ensure we are aware of all legal requirements that apply to our operations, including regulations, permits and ordinances and communicate these requirements to other managers affected by them.
- Periodically assess performance in complying with legal requirements.
- Maintain knowledge and understanding of the compliance status of Delaware No. 1 WPCF.

EMS Team

The EMS Team includes the Executive Director, Director of Operations – Administration, Chief Accountant, Director of Operations and Maintenance - Wastewater, Director of Operations and Maintenance - Interceptors, and other persons assigned from time to time by the Executive Director.

The EMS Team has the following responsibilities:

- Plan the EMS and its performance goals
- Determine objectives and targets for continual improvement and action plans for achieving these objectives.
- Determine the need for audits and/or other methods to assess the performance of our EMS.
- Review the suitability, adequacy and effectiveness of our EMS and determine and implement action to continually improve that effectiveness.

Contractors

Selected operations may be outsourced on a continuing basis to contractors with approval from the Executive Director. Expectations and requirements for contractor performance are outlined in contracts (Service Agreements). Specific activities that are currently performed by contractors on CCMUA's behalf include:

- Operation of biosolids drying equipment and operations.
- Biosolids transportation, storage and use.

Training Responsibilities

In addition, all department managers are responsible to define the required training for their areas and present it to senior management for approval. Senior managers are responsible to define the required skills and training for department managers and to review and approve training requests from the department managers for their staff.

3 PLANNING PROCESSES

Planning is an essential part of the CCMUA EMS. Planning processes are used to organize activities, products and services and desired improvements at the Delaware No.1 Water Pollution Control Facility.

Purpose and Content

This Section of the EMS Manual defines processes for planning activities so they are consistent with our Sustainability Policy. These processes include:

- Interested Party Participation
- Legal and Other Requirements
- Environmental Risks and Aspects
- Process Control Points and Operational Controls
- Objectives, targets and Action Plans
- Management of Change

Requirements and Responsibilities

Requirements within the Planning processes of our EMS are summarized below:

1. Consider input from interested parties in EMS planning and determining goals and objectives for improvement.
2. Identify legal and other requirements and ensure these requirements are incorporated into operations.
3. Identify significant environmental risks and aspects in activities, products and services that CCMUA controls, or is expected to control.
4. Identify Process Control Points and Operational Controls needed for ensuring compliance with legal and other requirements and for controlling significant environmental risks.
5. Manage significant changes so they do not adversely affect compliance, environmental performance, quality, or relations with interested parties.

The EMS Team is responsible to plan, coordinate and perform all necessary internal information concerning the EMS, significant environmental aspects, legal and other requirements.

The EMS Team considers input from the assessment of risks and opportunities associated with its organizational context and the needs and expectation associated with internal and external parties when planning the EMS and when establishing goals, objectives and targets for improvement.

The CCMUA Board of Commissioners periodically meets to plan activities and discuss performance at the Delaware No. 1 Water Pollution Control Facility.

3.1 Interested Party Participation

"Interested parties" external to CCMUA include the public, our customers, regulators, advocacy groups and other stakeholders who have an interest in CCMUA's environmental performance. Maintaining constructive relations with these external interested parties is an important "Performance Goal" for our EMS. "Interested parties" internal to CCMUA include Board of Commissioner, the Executive Director and management team, and employee unions. Active engagement of these parties in the implementation and improvement of the EMS is critical to its effectiveness. Both our internal and external interested parties have common expectations for CCMUA, include complying with regulations, minimizing adverse environmental impacts, maintaining good working relationships, communicating openly, and operating in a cost-efficient manner.

Input from external interested parties is obtained through various communications with these parties, including input received during Board of Commissioner meetings, comments during public meetings, direct inquiries and comments received from the parties and other methods that the EMS Team considers relevant. Specifically, communication is initiated through the Camden Collaborative Initiative (90 members), the Authority's web site (ccmua.org), the organizations the Authority belongs to (14 memberships), internal meetings and memos, external meetings, mailings to our customers, the Green Ambassadors, the Camden PowerCorps and site tours.

Input on the EMS, including concerns or improvement suggestions, from internal interested parties is obtained through Board of Commissioner meetings, CCMUA management meetings, union meetings, training sessions and staff meetings (see Section 5.1).

The Executive Director determines the relevance of input received from interested parties based on his judgment and ensures that the EMS Team is aware of relevant input. The EMS Team considers that input when planning the EMS and developing improvement objectives (see Section 5 of this Manual).

Other inquiries, including complaints from interested parties are directed to the EMS Team for review and response. If the EMS Coordinator decides that the inquiry/complaint is relevant, records of the inquiry and response are maintained in the communications database. If the inquiry is from a regulatory agency, it is directed to the Executive Director for action.

Any written complaint received from the public about our activities, products or services is directed to the EMS Coordinator for action. The EMS Coordinator maintains a log of each complaint and leads to a discussion with the Executive Director and the EMS Team regarding the complaint and validity and necessary corrective action.

3.2 Compliance (with Legal & Other Requirements)

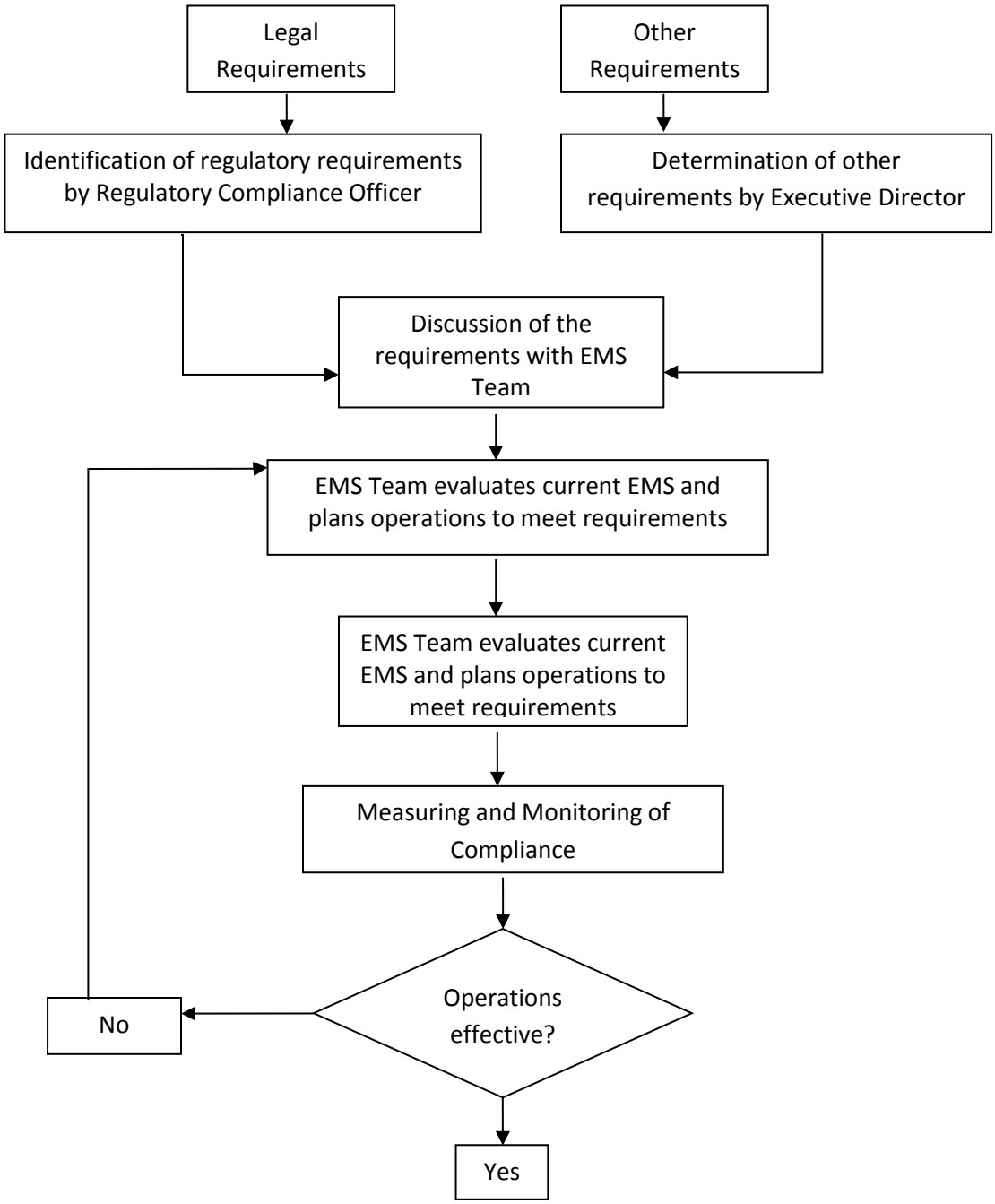
Purpose

Compliance with all applicable legal requirements and with other requirements to which we voluntarily subscribe is a primary goal of the CCMUA EMS and a minimum requirement for our product quality. The following process is used to identify legal and other requirements that apply to CCMUA operations, develop methods for meeting applicable requirements and to monitor and continually improve compliance with those requirements.

Legal requirements include regulations, permits and ordinances that apply to our operations. Other requirements include additional requirements to which we voluntarily subscribe.

Process Description

The "Compliance" process is used to identify legal and other requirements that apply to CCMUA operations, develop methods for meeting applicable requirements and to monitor and continually improve compliance with those requirements. Links between Compliance activities and other activities within the EMS are illustrated below:



Identification of Legal and Other Requirements

The EMS Team and the Regulatory Compliance Officer identifies legal requirements that apply to activities, products and services at the Delaware 1 Water Pollution Control Facility through communications with State Regulators.

The Executive Director determines "other requirements" to which CCMUA subscribes and discusses these requirements with the EMS Management Team.

A documented list of legal and other requirements is kept up-to-date by the EMS Team.

Application of Legal and Other Requirements

The EMS Team determines the applicability of legal and other requirements and controls necessary to ensure compliance with these requirements and issues instructions for implementing those controls. The Director of Operations and Maintenance implements agreed methods for ensuring operations comply with applicable legal and other requirements.

Compliance Monitoring / Measurement

Ongoing assessment of compliance with applicable legal and other requirements is monitored daily in controlling operations and in compliance evaluations (see Section 5 of this Manual).

3.3 Identification of Environmental Risks/Aspects and Significant Evaluation

Purpose

This procedure describes the method for identifying and evaluating environmental risks/aspects related to the wastewater treatment carried out by CCMUA respectively and determining the significance of these aspects. The procedure also applies to those indirect aspects arising from works carried out by CCMUA's on site contractors.

This procedure applies to all operations and activities, under normal conditions and reasonably foreseeable situations, in the facilities of CCMUA.

The EMS Team shall identify the environmental aspects of all activities, products and services of CCMUA and its onsite contractors, and evaluate the significance of the environmental aspects. A life cycle perspective is considered for those parts of the life cycle that CCMUA can control or is expected to influence, i.e., transportation, end-of-life treatment and final disposal of sludge).

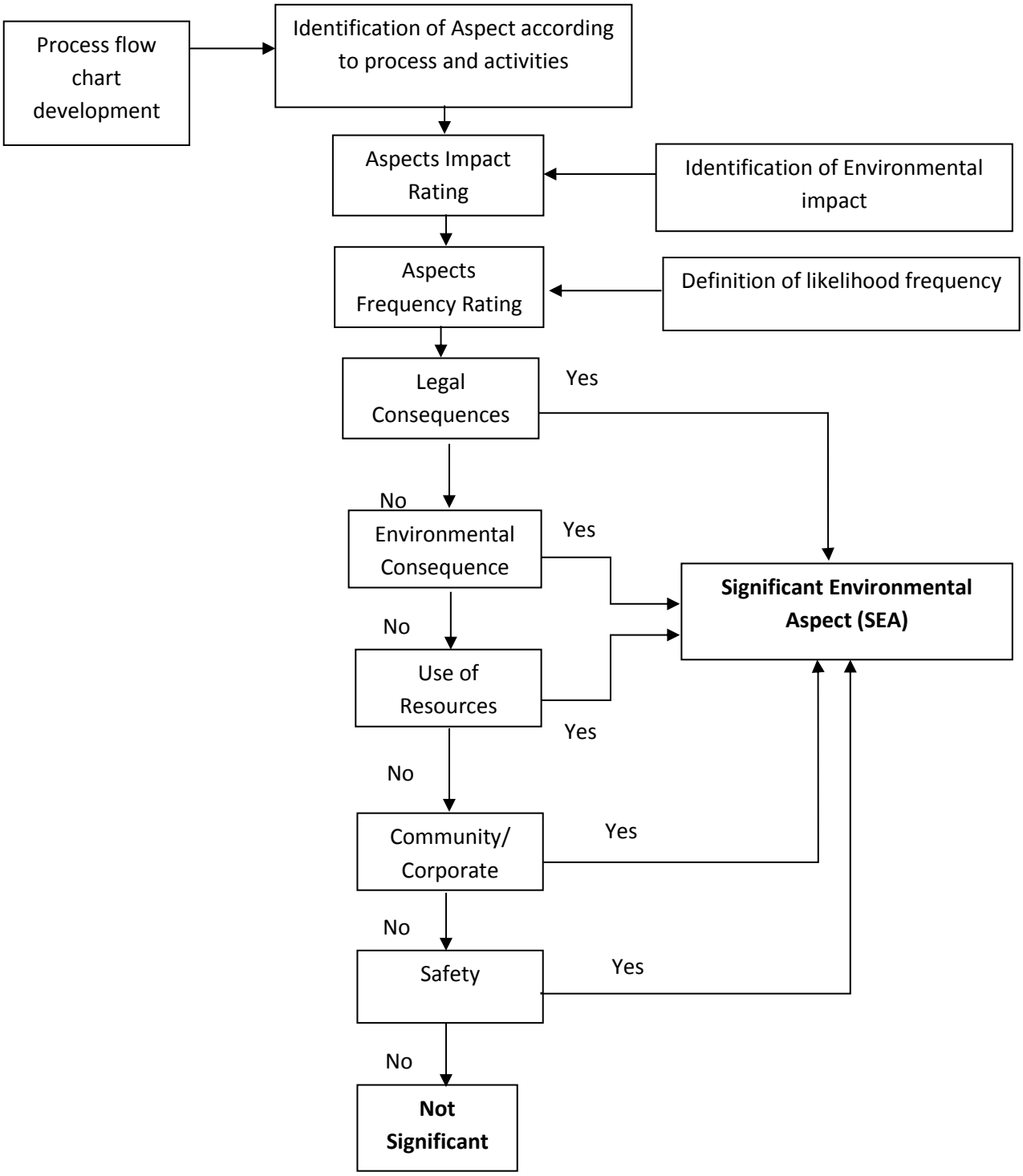
The members of the EMS Team/EMR shall prepare and maintain the Register of Environmental Aspects such that it contains the most up-to-date information.

The top management shall review and approve the Register of Environmental Aspects.

Monitoring

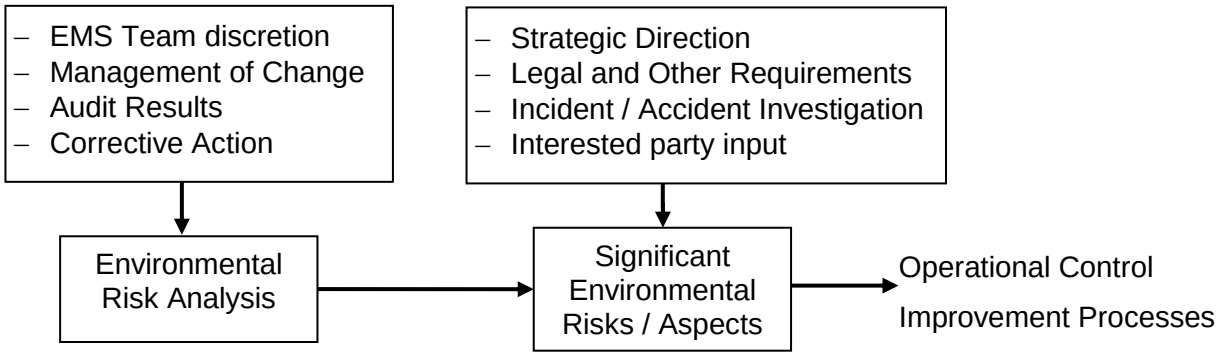
ID Register of environmental aspects

Appendix 1: Workflow of Aspect Identification and Evaluation



Process Description

The process for identifying Significant Environmental Aspects includes steps for analyzing environmental risks, identifying factors that affect significance and determining aspects that can cause significant risk. The results of this process are used in several other EMS processes. Steps within the process and links with other EMS activities are illustrated below:



Environmental Risk Analysis

Environmental risks associated with activities, products and services at the Delaware 1 Water Pollution Control Facility are analyzed using the procedure described below. These risks may change based on changes in equipment, activities, products and/or services as determined using the EMS Management of Change procedure, internal audit results, corrective and preventive actions, or if determined necessary by the EMS Management Team.

1. Separate plant activities into discrete operations. Some are performed directly by CCMUA and others are performed by contractors under CCMUA control.
    - Pretreatment and Collection Systems
    - Headworks and incoming flow
    - Wastewater Treatment and Disinfection
    - Biosolids Stabilization, Drying and Handling
    - Biosolids Storage and Transportation
    - Biosolids Use / Disposition
2. For each operation, identify environmental impacts that can occur under normal and abnormal conditions. This identification is done by a team including personnel familiar with environmental impacts and personnel familiar with the operation (unit) being analyzed. Environmental impacts may include:
    - Air pollution (including greenhouse gas)
    - Water pollution
    - Nuisance/Odors
    - Waste generation (hazardous and non-hazardous)
    - Energy use
3. Determine whether the identified impact occurs under normal or abnormal conditions. For normal conditions, determine if the severity of the impact is High (irreversible environmental damage), Medium (serious, but reversible, environmental damage), or Low (some environmental harm, fully

reversible). If the impact occurs under abnormal conditions, determine whether the likelihood of occurrence is High (often), Medium (at least once per year) or Low (seldom) and whether the severity is High, Medium or Low.

4. Using the chart below, determine whether an impact has a High, Medium or Low level of Risk. The chart shown is for impacts that occur under abnormal conditions. For impacts that occur under normal conditions, use "High" likelihood of occurrence.

Severity of Impact	Low	Medium	High
High	Medium Risk	High Risk	High Risk
Medium	Low Risk	Medium Risk	High Risk
Low	Low Risk	Low Risk	Medium Risk

Likelihood of Occurrence

Significant Environmental Aspects

Significant Environmental Aspects include activities, products and/or services that the can result in High or Medium Environmental Risk and/or other factors that the EMS Team determines require control for continually improving environmental performance. Other factors can include strategic needs, regulatory requirements, incident investigations and/or interested party input.

Identified significant environmental aspects are used in several parts of the EMS, including identifying Process Control Points and Operational Controls and determining objectives for improvement.

3.4 Process Control Points & Operational Controls

Purpose

The purpose of our procedure is to define operational controls and methods for monitoring and measuring the performance or our activities related to the significant environmental aspects, internal quality requirements, legal and other requirements.

This procedure applies to all business activities including contracted activities which have an impact on the significant environmental aspects, critical control points, legal and other requirements and the CCMUA environmental targets and objectives.

The EMS Team is responsible for advising the Director of Operations and Maintenance (wastewater) regarding required operations controls. The Director of O&M determines and implements methods used to control our operations at each Process Control Point and reports about the effectiveness of the methodologies to the executive director. The Executive Director, assisted as necessary, directs actions to monitor and measure offsite operations that represent significant environmental risks for CCMUA.

"Process Control Points" are activities and/or locations within operations where controls are needed for minimizing significant environmental impacts, meeting product quality requirements and complying with legal and other requirements.

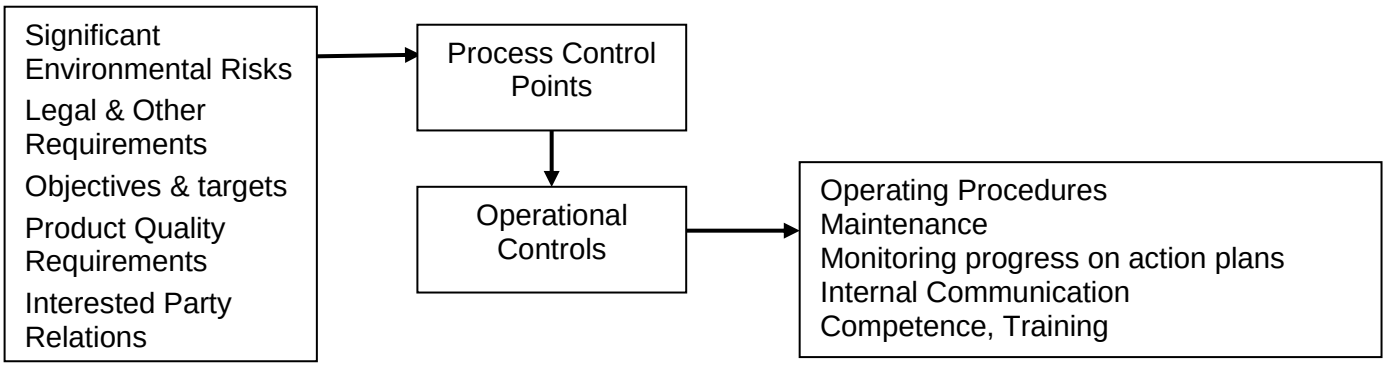
"Operational Controls" are the methods used at each Process Control Point for ensuring significant environmental risks are controlled, product quality requirements are met and legal and other requirements are complied with.

Process Description

The process for identifying Process Control Points and Operational Controls is used to determine activities and/or locations where control is needed and for determining what controls are needed for minimizing significant environmental impacts, meeting product quality requirements, ensuring compliance with legal and other requirements, achieving environmental objectives and for maintaining and improving relations with interested parties, including:

- Control of significant environmental risks
- Compliance with all applicable legal and other requirements
- Environmental objectives and targets
- Product quality (including wastewater effluent and byproducts)
- Positive relations with interested parties.

Links between identification of Process Control Points and Operational Controls and other activities within the EMS are illustrated below:



Identification of Process Control Points

The EMS Team determines Process Control Points within specific operations by reviewing the operation and associated actual and potential environmental impacts, product quality requirements and applicable legal and other requirements. In making this determination the EMS Team may consult with operating personnel and other persons who are knowledgeable in the operation being considered.

Determining and Implementing Operational Controls

The EMS Team determines methods needed to control environmental risks, ensure product quality and legal and other requirements are met and achieve objectives for improvement (see Section 6 of this manual). Operational control methods may include written operating procedures / instructions, operator skills, maintenance for engineered controls, internal communication and other appropriate methods.

The EMS Team advises Operations management regarding required operational controls. Based on this advice, Operations management establishes and maintains the controls, including approval of written operating procedures, and takes steps to ensure operating personnel are competent in performing their assigned tasks. The Maintenance Manager takes steps to ensure appropriate

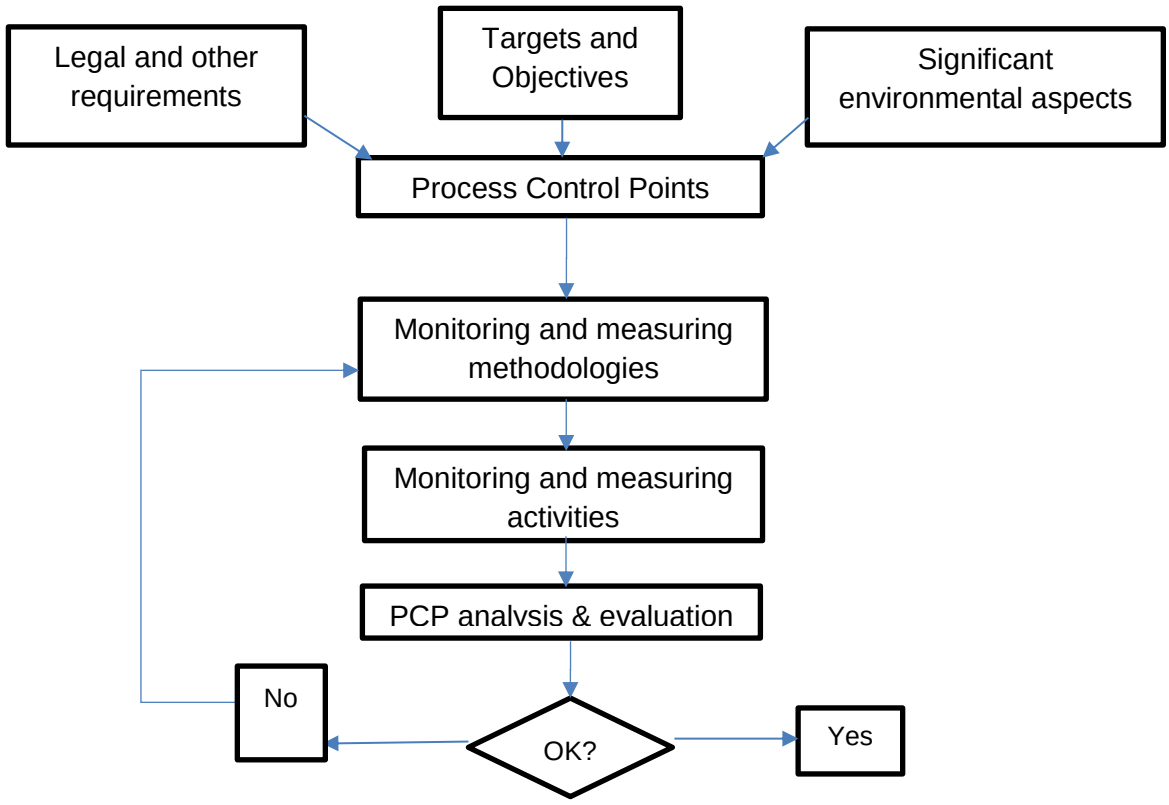
maintenance is performed to ensure engineered controls function as intended. The Executive Director determines controls needed for activities performed by contractors and take steps to ensure these controls are effectively implemented.

Further, the Executive Director, assisted as necessary, directs actions to monitor and measure offsite operations that represent significant environmental risks for CCMUA, including those performed on our behalf by contractors, to ensure that the desired results are achieved. This monitoring and measurement includes inspection of contractor activities and review of operating data. Records of this monitoring and measurement are controlled as stated in our "Control of Records" procedure.

A list of applicable Process Control Points and Operational Controls is included in the Appendices of this Manual.

Monitoring

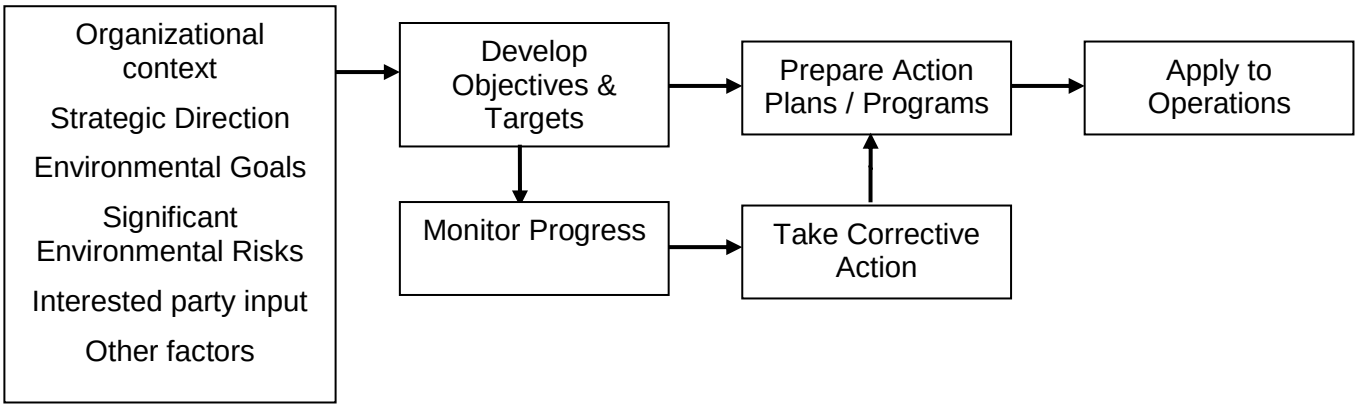
Records of monitoring and measuring results are controlled according to our internal policy. Records may vary and can be filed as hard copies or electronic version.



3.5 Objectives, Targets and Action Plans

Process Description

Objectives and targets are developed for improving the performance of the management system in specific areas. The process includes development of measurable objectives and targets and development of action plans (programs) including steps, responsibilities and timing for achieving each objective. This process is illustrated below.



Monitoring of progress in achieving objectives is addressed in Section 5 of this manual.

Development of Objectives, Targets and Action Plans

The EMS Team develops objectives, targets and programs for improving environmental performance based on strategic direction, environmental goals, significant environmental risks, views of interested parties and other factors associated with the organizational context they consider to be relevant (e.g. business and financial interests, technology options). The duration for achieving objectives can range from 1 year to 3 years.

Each objective must state specifically what is intended to be achieved and include a measurable target. At least one objective will address improvement in each of the following areas:

- environmental performance
- product quality
- compliance with legal and other requirements
- relationship with interested parties.

When developing objectives and targets, the EMS Team prepares an action plan (program) for achieving each objective that includes steps, responsibilities, unique resource requirements (e.g., capital funding, external engineering expertise, etc), a measuring method, and timing. These plans are typically extended to other CCMUA functions or levels that can contribute to achieving the overall objective and become objectives in these areas.

CCMUA's Objectives and Targets can be found in the Appendix, CC-P2.

3.6 Management of Change

Purpose

CCMUA recognizes that changes are inevitable and essential to adapt effectively to a changing environment and continually improve the business and EMS. Our management of change (MOC) procedure is developed to ensure that changes are properly assessed, planned, approved and executed by persons with the required expertise.

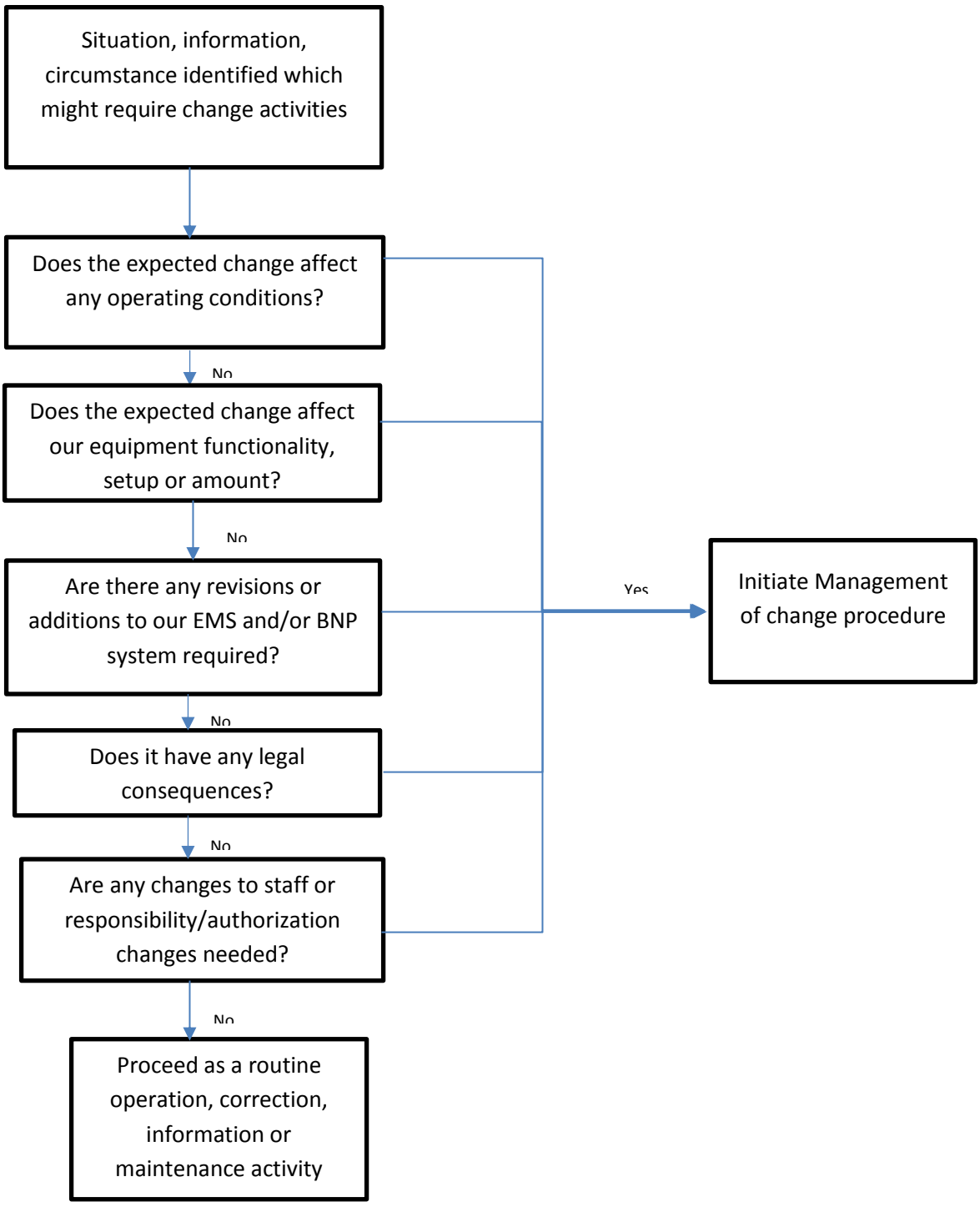
The MOC process covers all business activities of CCMUA and our EMS including BNP.

A "Management of Change" (MOC) process is used to plan significant changes in equipment, technology, products, responsibilities and other changes that the EMS Team determines require planning. A "significant change" is any change that can adversely or beneficially affect environmental performance, compliance with legal and other requirements, product quality and/or relations with interested parties. The “Originator” is any employee who identifies the need for change and requests a change project.

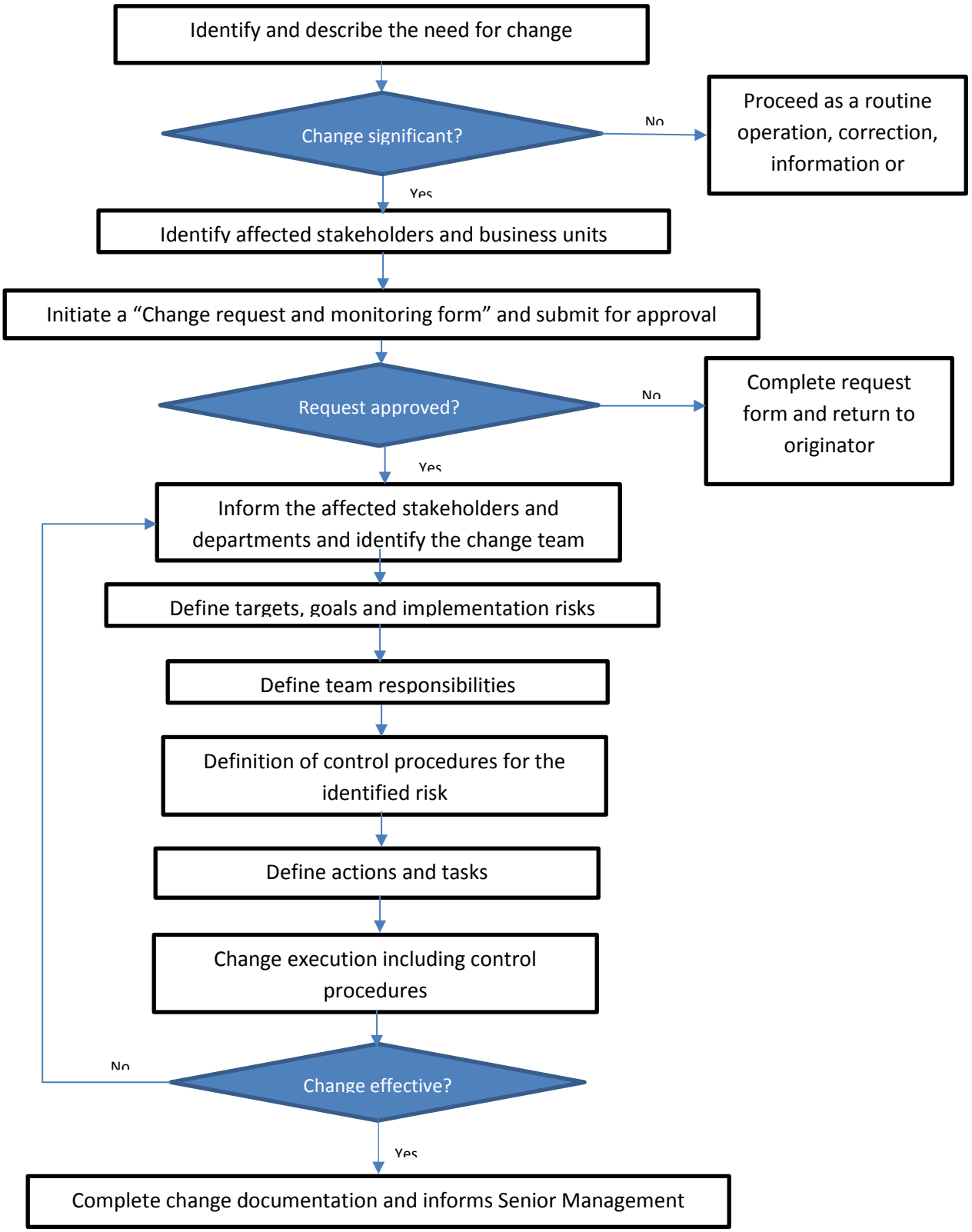
Process Description

The Management of Change procedure includes a series of steps that must be completed before a significant change can be implemented. The first step in our procedure is the decision if the requested change is a “significant change” and if the change will be executed. We use the decision tree below then follow the MOC procedure steps according to the flow chart.

Management of Change Decision Tree



Management of Change Procedure Flow Chart



Management of Change Procedure

The EMS Team determines if a proposed change is significant enough to require use of a formal management of change procedure.

1. Identify a change in equipment, technology, products, responsibilities, or other changes that may affect environmental performance.
2. Define actions to be completed before the change is implemented, including responsibilities and timing. These actions address the following, as applicable:
   - Relevant information communicated to persons affected by the change
   - Drawings and equipment information (e.g. O&M Manual) up to date and available
   - Operating and maintenance procedures written
   - Personnel training completed
   - Prestartup safety review completed, including any necessary follow-ups
   - Other considerations (determined by EMS Team)
3. Assign responsibility for reviewing preparations and final approval for implementing the change.
4. Determine if change will affect environmental risks and, if necessary, re-analyze the environmental risks (see "Environmental Risks").
5. Maintain records of completed preparations and final approval for the significant change.

Monitoring

All change activities, affected stakeholders and results are monitored in the Appendix, CC-P23-F1, “Change Request and Monitoring Form”.

4 EMS IMPLEMENTATION

Plans developed for the EMS are implemented throughout the Delaware 1 Water Pollution Control Facility. The EMS Coordinator directs this implementation to ensure it is effective.

Purpose and Content

This Section of the EMS Manual defines processes for controlling wastewater treatment and biosolids preparation operations so they are consistent with the CCMUA Environmental Policy. These processes include:

- Control of Operations
- Maintenance
- Emergency Preparedness and Response
- Control of Suppliers and Contractors

Requirements

Requirements within the Implementation processes of our EMS are summarized below:

1. Ensure operations at the Delaware 1 Water Pollution Control Facility function as intended to achieve desired results.
2. Maintain critical operating equipment so it is reliable, available and operates as intended.

3. Prepare for emergencies that can cause unexpected significant environmental impact(s), including response to such emergencies.
4. Control suppliers and contractors who provide products or services and/or perform activities on CCMUA's behalf.

4.1 Control of Operations

Operational controls are methods used to ensure activities, products and services used in pretreatment, collection, wastewater treatment and biosolids preparation and use operations at the Delaware 1 Water Pollution Control Facility are consistent with desired results, including:

- Establish environmental criteria in the design of facility upgrades and processes.
- Control of significant environmental risks.
- Compliance with all applicable legal and other requirements.
- Product quality (including wastewater effluent and byproducts).
- Positive relations with interested parties.

Process Control Points are determined as stated in Section 3 of this Manual. The Director - Operations and Maintenance determines and implements methods used to control our operations at each Process Control Point. These methods may include:

- Administrative controls, such as standard operating procedures, written instructions, operator skills, communications, inspections
- Engineered controls, such as software systems (e.g. SCADA), flow / emission control devices, barriers

<u>Standard Operating Procedures</u>

Standard Operating Procedures (SOPs) are a special type of operational control. The Director - Operations and Maintenance determines the need for SOPs, particularly for activities that must be performed in a consistent way to minimize environmental risk, and arranges for the SOPs to be written and approved and for restricting use of the SOP to qualified personnel.

<u>Operations Monitoring, Measurement, Analysis and Evaluation</u>

The desired results of wastewater treatment and biosolids preparation and use operations are to ensure:

- wastewater effluent and biosolids product quality requirements are met
- legal and other requirements are complied with
- objectives and targets are achieved

The Director - Operations and Maintenance, assisted as necessary, directs actions to monitor and measure onsite wastewater treatment and biosolids preparation operations, including those performed on our behalf by contractors, to ensure that the desired results are achieved. This monitoring and measurement includes equipment inspections, trending of operating data and evaluation laboratory analysis results. Records of these monitoring and measurement data and analysis of results are controlled as stated in Section 5 of this manual.

The Executive Director, assisted as necessary, directs actions to monitor and measure offsite operations that represent significant environmental risks for CCMUA, including those performed on our

behalf by contractors, to ensure that the desired results are achieved. This monitoring and measurement includes inspection of contractor activities and review of operating data. Records of this monitoring and measurement are controlled as stated in Section 5 of this manual. Contractor performance is analyzed and evaluated during contract renewal.

Operational Corrections

If the monitoring and measurement of operations determines that desired results are not being achieved, the Director - Operations and Maintenance or the Executive Director, as appropriate, directs immediate action to return the operation to its desired condition. Continuing or repeated problems in operations may represent a systemic problem, in which case the problem is addressed using the EMS Corrective / Preventive Action Process (see section 6 of this Manual).

4.2 Maintenance

Purpose

CCMUA must maintain its equipment records in order to document adequate treatment of the wastewater prior to discharge and adequate processing of biosolids. Both corrective and preventive maintenance are required for a complete procedure.

The maintenance process procedure covers all maintenance plans and activities performed by internal CCMUA staff and/or external vendor.

Ensuring operating equipment is available when needed and remains in reliable working condition are key factors in controlling operations. The Maintenance Manager directs Reliability and Maintenance activities, including:

- equipment repair and/or replacement
- preventive / predictive maintenance programs

Equipment Repair / Replacement

The Maintenance Manager, consulting with the Director - Operations and Maintenance, determines priorities for repairing equipment that unexpectedly fails or is out of service and issues instructions for those repairs. If equipment needs to be replaced instead of repaired, the Maintenance Manager and the Director - Operations and Maintenance issue instructions for that replacement.

Preventive / Predictive Maintenance

The Maintenance Manager determines schedules and activities for preventive maintenance of critical equipment and issues instructions for that maintenance. These activities can be defined through equipment manufacturers' information (e.g. O&M Manual) or through experience with the equipment.

The Maintenance Manager assesses the integrity of critical equipment and predicts the need for maintenance based on:

- results of periodic inspections performed by Maintenance and Operations personnel
- non-destructive testing of the equipment, such as oil analysis, vibration analysis and ultra-sonic tests

Calibration

Devices used to monitor / measure equipment operation and product quality must be calibrated against national standards. The Maintenance Manager identifies such measuring devices and takes action to

ensure that the necessary calibrations are performed and up to date and that calibration records are kept.

Monitoring

Completed maintenance and calibration activities will be monitored in maintenance logs for the particular equipment. Unexpected repairs will be monitored by maintenance staff and reported to the Director of operations and maintenance. Replacement of purchase decisions of equipment relevant to the EMS can be monitored during management review meetings, department meetings, management meetings and in other ways.

4.3 Emergency Preparedness and Response

Purpose

This process is used to prepare for emergencies and respond to them effectively. Preparing for emergencies is an integral part of planning and controlling operations. Our emergency plans define preparations in advance of emergencies and procedures and responsibilities that apply before, during and after emergencies.

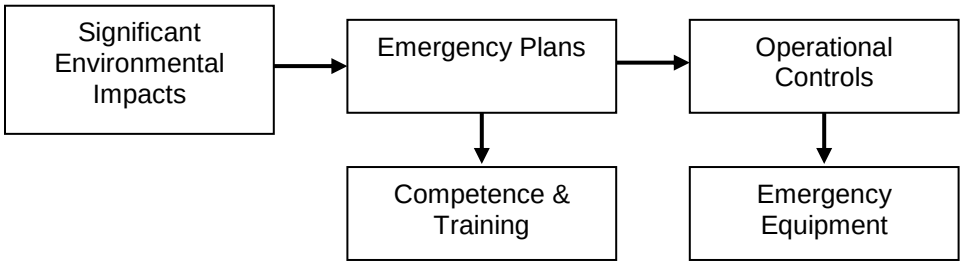
Scope

This process applies to all business activities at CCMUA for which potential accidents and emergency situations may arise. The procedures for preventing and mitigating the following emergency situations for:

- Fires, explosions;
- Rainstorms, winter snow/ice storms, typhoon or other weather conditions;
- Major chemical spillage or leakage;
- Accidents as a result of equipment failure.

An "emergency" is any event that causes, or could cause, an uncontrolled significant environmental impact. The process used to prepare for emergencies and respond to them is described below.

Preparing for emergencies is an integral part of planning and controlling operations. Emergency Plans define preparations in advance of emergencies and procedures and responsibilities that apply before, during and after emergencies. Links with other EMS processes are illustrated below.



Preparation of Emergency Plans

The Executive Director takes action to ensure that up to date and effective written plans are in place for controlling and responding to emergencies that can cause significant environmental impacts at the Delaware 1 Water Pollution Control Facility. Emergency Plans include the following information:

- The nature of on-site hazards, e.g. flammable liquids, storage tanks and compressed gases, and measures to be taken in the event of spillages or accidental releases.
- The most likely type and scale of an emergency situation or accident.
- Appropriate method(s) for responding to an accident or emergency situation.
- Internal and external communication plans.
- Action(s) required to minimize environmental damage.
- Mitigation and response action(s) to be taken for different types of accident or emergency situation.
- Need for post-accident evaluation to establish and implement corrective and preventive actions.
- Periodic testing of emergency response procedure(s).
- Training of emergency response personnel.
- Contact information for key personnel and aid agencies (fire and police departments, spillage clean-up services).
- Evacuation plans, including assembly points.
- Potential for an emergency situation(s) or accident(s) at a nearby facility (e.g. plant, road, railway line).
- Possibility of mutual assistance from neighboring organizations.

Emergency plans are reviewed, and updated as needed, following emergencies during which the plan was used, following emergency drills and exercises and as the EMS Team determines necessary.

Emergency Plan Awareness, Training and Exercises

Personnel at the Delaware 1 Water Pollution Control Facility, including contractors, are made aware of their emergency responsibilities through awareness training and through emergency exercises. Training is conducted through internal communication, ready access to emergency procedures and exercises. Relevant information about CCMUA's emergency plans are provided to external responders on a periodic basis.

Emergency Response Equipment

Equipment to be used in responding to emergency situations is identified in written emergency plans. The Operations Director takes action to ensure this equipment is in good working condition and readily available in the event of an emergency.

Monitoring

Results of emergency testing are monitored in the "Emergency Testing Report", accidents are monitored in the "Accident Report". Any corrective action resulting from the evaluation of the emergency situation will be monitored in the Appendix, CC-P12-F1 "CAPA monitoring form".

4.4 Control of Contractors and Suppliers

Purpose

Contractors and suppliers can perform important functions within the CCMUA EMS. Contractors can operate equipment and perform additional services as part of CCMUA operations. Suppliers can provide products and services to assist CCMUA in operating equipment and producing quality products. Our procedure defines important requirements for the control of contractors and suppliers such as defined in written Service Agreements and defined purchase orders approved by the Executive Director.

Our process covers all contractors and suppliers of CCMUA.

Contractor Roles and Responsibilities

"Contractors" are organizations that provide ongoing services to CCMUA and/or operate equipment on behalf of CCMUA. Examples of contractor activities include operation of CCMUA equipment, transportation, storage and/or the use of CCMUA products. Typically, the responsibilities of contractors are defined in contracts or Service Agreements. The roles and responsibilities of contractors within the CCMUA EMS are defined in Section 2 of this Manual. Information on potential environmental impacts associated with contractor activities is provided in contracts/service agreements and shipping documents, as applicable.

Suppliers (or vendors) are organizations that periodically provide products or services to CCMUA. Examples of supplier activities include provision of equipment or materials used in our processes.

Expectations for Contractors and Suppliers

Requirements for contractors who perform activities on CCMUA's behalf are defined in written agreements.

In addition, contractors are expected to:

- Perform their activities consistent with requirements specified in the CCMUA Sustainability Policy, environmental policy and EMS.
- Establish training programs for their employees consistent with their roles and responsibilities.
- Advise CCMUA of any complaints or other meaningful communication received from external interested parties related to CCMUA operations or products.
- Establish operational controls and monitoring / measurement procedures for their activities.
- Establish and maintain Emergency Preparedness and Response Plans and Procedures for response to accidents and emergencies that can affect CCMUA operations, including offsite emergencies.
- Establish document control and record requirements for their activities, as specified by CCMUA and/or regulatory requirements.

Requirements for suppliers who provide products and materials to CCMUA are defined in purchase orders or other written agreements. In addition, suppliers are expected to perform their activities on CCMUA's behalf consistent with requirements in our Sustainability Policy.

Assessment of Contractors and Suppliers

The EMS Team directs periodic assessments of the performance of contractors and suppliers that can impact our environmental performance for consistency with written agreements and expectations stated above. Assessments may include:

- Audits of a contractor's performance (see Internal Audit process)
- Evaluation of key supplier performance against specific measures
- Review of contractors' SOPs for conformity to the CCMUA's SOPs.

Results of the assessment are discussed with the contractor / supplier for the purpose of continually improving performance of both CCMUA and the contractor / supplier.

Monitoring

Service agreements and purchase orders define the extent of task and duties of contractors and suppliers. Further, all results and follow-up from contractor/supplier assessments are monitored.

5 SUPPORT PROCESSES

In many cases, EMS processes for Planning and Control of Operations require support from additional processes in order to function effectively and achieve desired results.

Purpose and Content

This Section of the EMS Manual defines processes used to support the Planning and Control of Operations processes within our EMS. These "Support" processes include:

- External Communication and Outreach
- Internal Communication
- Competency, Awareness and Training
- Control of Documents and Records

Requirements

Requirements within the Support processes of our EMS are summarized below:

1. Communicate proactively with external interested parties to ensure outreach programs are effective and to obtain input from the interested parties for planning and controlling operations.
2. Communicate internally to engage employees in continually improving the performance of our EMS.
3. Ensure personnel whose tasks can affect desired results are aware of their contribution to achieving desired results and are competent, including providing training or other actions.
4. Control important documents required by the EMS and records that demonstrate performance.

5.1 Communication Program

Purpose

Effective communication of accurate and reliable environmental information is a key component of the CCMUA EMS. This includes internal communication within CCMUA and its operations and external communication and outreach with interested parties especially concerning the significant environmental aspects.

General Description

The Communication Program within the CCMUA EMS includes:

- Internal Communication
- External Communication and Outreach
- Response to Interested Party Inquiries and/or Concerns

Procedure

Maintaining relations with interested parties requires proactive communication, including informing the interested parties about our EMS and environmental performance and receiving and responding to inquiries, complaints and other relevant input received from the interested parties. Top management and the EMS Team consider input from external interested parties when planning the EMS and when establishing goals, objectives and targets for improvement.

Internal Communication

Internal communication within the EMS is intended to:

- Make personnel, including contractors, aware of our EMS requirements and their EMS roles and responsibilities for meeting these requirements. For CCMUA personnel, the policy will be included as a payroll stuffer once per year in January. For Contractors, the EMS Coordinator will communicate and provide updates of the EMS policy once per year in January.
- Encourage input from employees to help in continually improving performance.
- Communicate environmental policy, targets and objectives.
- Inform about important changes or updates of our EMS.
- Inform all affected employees about corrective and preventive actions.
- Communicate legal and other requirements to our staff.

Internal communication about the EMS and environmental performance occurs through:

- Annual Distribution of Environmental/Sustainability Policy to all persons working for or on behalf of the organization.
- Posting of the Sustainability Policy on bulletin boards.
- Training (see Competency, Awareness and Training).
- Discussions during staff meetings.
- Reporting results of Internal Audits to relevant management.
- Improvement suggestions from employees.
- Other methods, as determined by the EMS Coordinator.

Internal Communication can be monitored in different ways through electronic filing, meeting reports, postings and communication logs.

External Communication and Outreach

Proactive communication about our environmental plan and performance and our EMS is intended to make accurate and reliable information available to external interested parties and to respond to relevant inquiries or concerns from these parties. It is also intended to provide meaningful opportunities for the public to provide input to help CCMUA plan our activities. The following requirements will help in achieving that intent.

a) The CCMUA Board of Commissioners periodically meets to plan activities and discuss performance at the Delaware 1 Water Pollution Control Facility. These meetings are open to the public and public input is encouraged during the meetings. Additional outreach to the community occurs through attendance at community meetings and public presentations.

b) Input from the public and other interested parties is obtained during Board of Commissioners meetings, public meetings, feedback from the interactive CCMUA website and through direct oral and verbal communication that CCMUA receives.

c) The EMS team decides about necessity and methodology of external communication concerning significant environmental aspects.

d) The Regulatory Compliance Officer files all regulatory reports with the appropriate agency.

e) CCMUA's leadership in the Camden Collaborative Initiative (CCI) provides proactive outreach and public participation leading to improvements in Camden area. This Initiative was launched on

January 24, 2013, through the CCMUA, with the support of City of Camden, Cooper's Ferry Partnership, New Jersey Department of Environmental Protection, and the United States Environmental Protection Agency. The CCI is building upon the success of environmental initiatives underway, made possible by the efforts and resources of multiple partners that have come together to address the complex environmental issues present in the City. The CCI was formed to realize the many opportunities to maintain, restore, and enhance the environmental resources in the City of Camden.

The Authority staff meets frequently with all groups of the CCI. The meetings often lead to new projects with the CCI members or groups of members of which there are 90 members. The Authority supports these projects by providing staff to attend the meetings, and providing meeting space. Authority staff and consultants usually work on the ensuing projects. The Authority also funds part or all of the costs of the many projects started through this process.

f) CCMUA leads the "Green Ambassador" program involving local high school students in environment, education and employment.

g) The Authority web site documents the environmental work accomplished by our Authority often in partnership with the CCI members. The web site address is printed on every invoice mailed to each of the Authority's 160,000 customers. The web address is printed on letterhead, available through any web search and is updated frequently with additional information. The web site is frequently updated with new information and links.

h) The Authority is a member of and communicates with the 14 different organizations including the Water Environment Federation, National Association of Clean Water Agencies. This communication and outreach can take several forms including working with other organization members to share ideas or, through the Authorities Executive Director/Chief Engineer, leading initiatives that ultimately benefit the wastewater and stormwater community. The Executive Director is often asked to present at events held by the members on this list, CCI members and additional organizations.

i) The Authority mails bills quarterly to all of our customers and includes an insert will these bills about environmental topics. Often as part of outreach to our community, an insert for one of the CCI partners is mailed with our bill with no cost for our partner. Other inserts are designed by Authority Staff or CCI partners at the request of our Authority.

j) The Camden PowerCorps began during 2015 which is an AmeriCorps program supported by our Authority and Camden City. The members learn about the environmental activities of our Authority during their service. They maintain green infrastructure sites, County and City Parks and property.

External communication concerns are mainly monitored through customer/public complaints and third-party audits.

Response to Interested Party Inquiries and/or Concerns

Inquiries, including complaints, from external interested parties are directed to the EMS Coordinator for review and response. If the EMS Coordinator decides the inquiry / complaint is relevant, records of the inquiry and response are maintained in the communications database. If the inquiry is from a regulatory agency, it is directed to the Executive Director for action.

The Executive Director determines the relevance of input received from interested parties based on his judgment and ensures that the EMS Team is aware of relevant input. The EMS Team considers that input when planning the EMS and developing improvement objectives.

Any written complaint received from the public about our activities, products or services is directed to the EMS Coordinator for action. The EMS Coordinator maintains a log of each compliant and leads a discussion with the Executive Director and the EMS Team regarding the complaint validity and necessary corrective action.

Performance Reporting

At least annually, CCMUA prepares a report to provide information about our environmental performance to the public. This report is prepared by the EMS Coordinator(s) and approved by the Executive Director, and includes a summary of:

- monitoring / measurement results that demonstrate performance relative to environmental goals, objectives, legal & other requirements, including contractor activities
- results of third party audits that verify conformance with "planned arrangements" (see1.2)

Regulatory reports are submitted to respective agencies as required.

Monitoring

Internal communication can be monitored in different ways through electronic filing, meeting reports, postings and communication logs. External concerns are mainly monitored through customer/public complaints and third party audit reports.

The quality of environmental information generated through the EMS is assured through the use of certified laboratories, independent laboratory analyses, and internal audits.

5.2 Competency, Awareness and Training

Purpose

The CCMUA ensures that all new and current employees have the required skillset through ongoing training to perform their tasks and duties effectively, especially their contribution to a successful EMS. All new employees will go through a defined training cycle which includes essential information about the CCMUA business and EMS within the first 4 weeks.

It is also necessary to ensure ongoing training for qualified employees due to changing requirements, circumstances and needs. Therefore, the senior management defines yearly training needs together with the EMS Coordinator and the department managers. The effectiveness of all training will be evaluated.

The necessary qualifications of CCMUA personnel, including education, experience and skills are described in Job Descriptions. The necessary skills are also noted in the Table outlining process control points and operational skills.

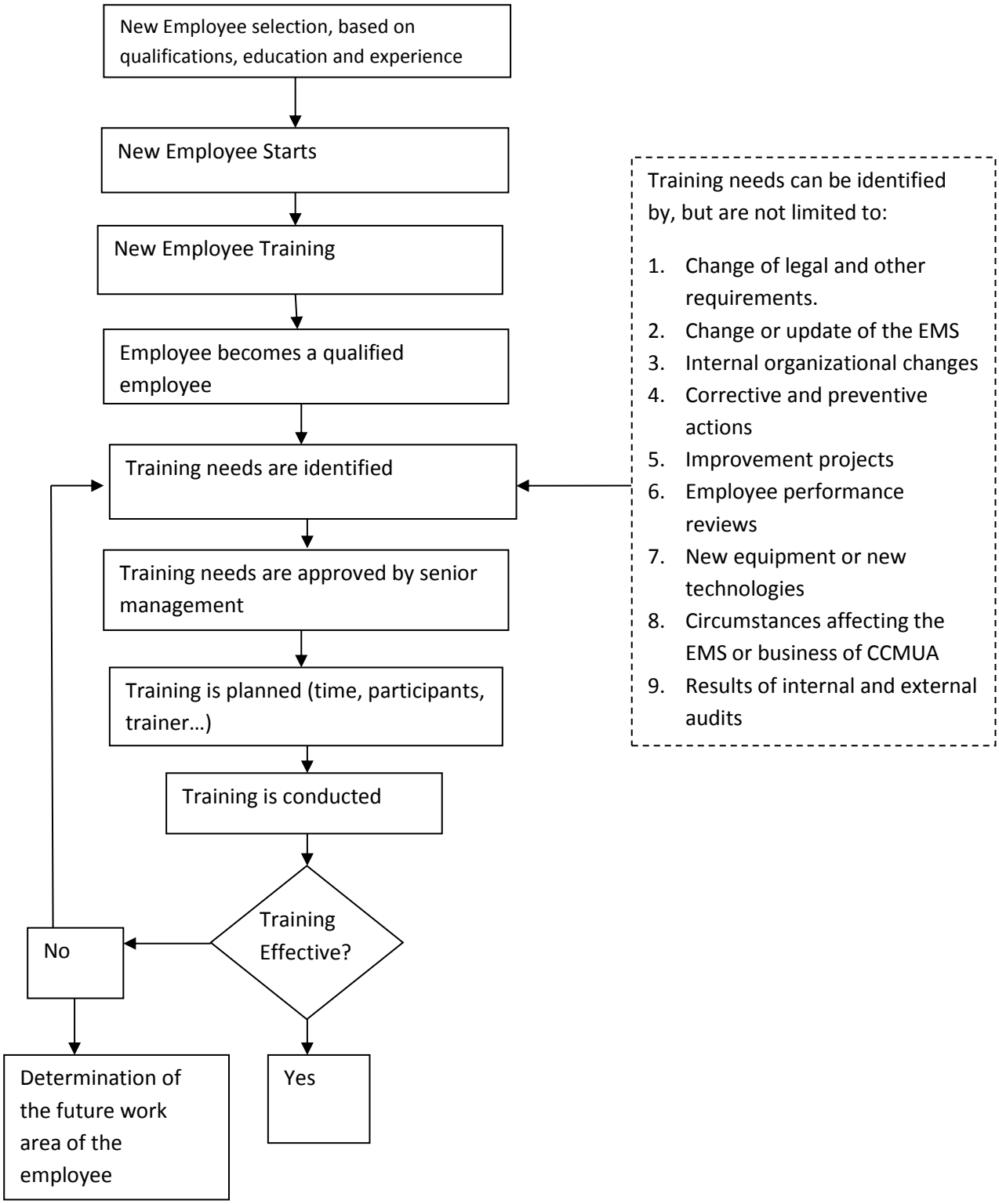
The following additional competencies are required for personnel, including contractors, who perform activities associated with significant environmental risks.

Position / Activity	Competency Required	Training Required
All CCMUA personnel	Qualified for their EMS tasks (defined education, training and experience)	EMS Awareness Training Emergency Awareness Training
Operations Management and Operators	Skills per required operational controls	Regulatory training (as applicable to their job tasks) Job-specific training in their roles / responsibilities (can be on-the-job training)
Contractors	Qualified personnel	Job-specific training for their roles / responsibilities

Monitoring

All training is monitored. Evaluations of training effectiveness can be monitored in various ways, i.e., knowledge quiz, questionnaire, feedback from managers, analysis of data, etc.

The following chart illustrates CCMUA's training approach with new employees:



5.3 Control of Documents and Records

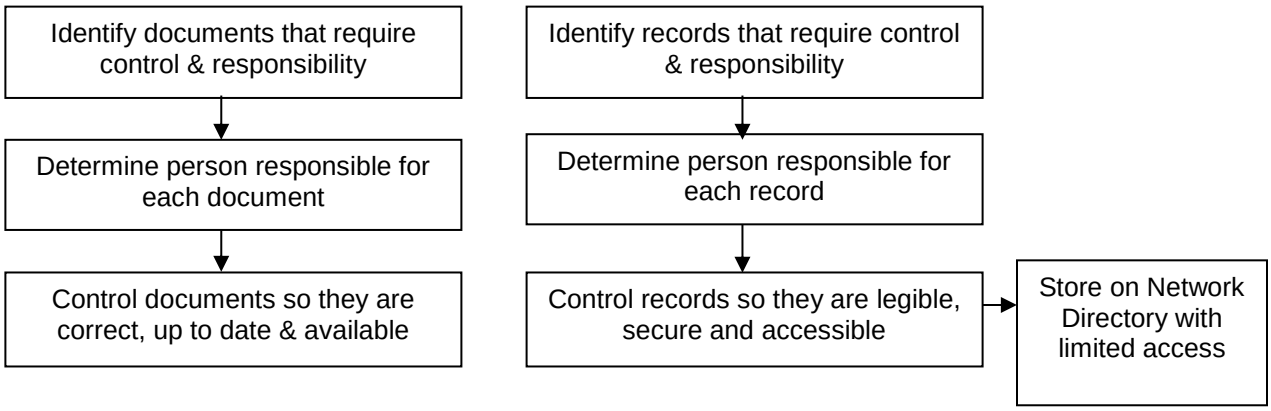
Purpose

This procedure describes the control system for preparing, approving, distributing, revising and updating documents that are required under the Environmental Management System (EMS) according to ISO 14001 and National Biosolids Partnership.

Process Description

Certain documents that describe procedures or information require control to ensure the correct version is used. Records that demonstrate environmental performance must be controlled to ensure they are retained and available. All controlled documents and records are stored on CCMUA's Network Directory with limited access.

The process for identifying and controlling important documents and records used in our EMS is illustrated below.



Documents Requiring Control

Documents provide information and/or state what performance is intended to occur. The "Responsible Person" ensures that the document is controlled according to the procedures stated below.
Certain documents of external origin also require control to ensure they are readily available.

Records Requiring Control

Records demonstrate what performance has occurred. The "Responsible Person" ensures that the record is controlled according to the procedures stated below.

Document Control Procedure

The identified Responsible Person maintains a master copy of each document for which they have responsibility and takes steps to ensure the document is:

- Approved by an authorized person.
- Identifiable and dated.
- Readily available to persons who need to use the document.
- Reviewed, revised and re-approved, as necessary, to ensure the document is correct, complete and up to date.

When changes occur in controlled documents, the Responsible Person takes action to ensure:

- Persons affected by the change are aware of the changed document.
- The updated version of the document is available where needed.
- Obsolete versions are destroyed or archived so they are not unintentionally used.

Recordkeeping Procedure

The Responsible Person identified for each record requiring control takes appropriate steps to ensure the record is maintained so it is:

- Legible and readily identifiable
- Secure
- Accessible
- Retained for at least the retention period noted
- Disposed of following internal policies
- Stored on the Network with limited access.

Only the Responsible Person can authorize a change in a controlled record. When changes are made, the person making the change notes the previous record, the reason for the change and approval for making the change either on the record or in a way that this information is clearly linked to the record being changed.

The "Responsible Person" noted above may delegate recordkeeping responsibilities, but retains responsibility to ensure the record is effectively controlled as stated above.

Procedure

At a minimum, the following documents require control:

Internal Document Name
The EMS Manual which contains the following:
EMS Policy, targets and objectives
CCMUA Organization chart
Register of significant environmental aspects
Standard Operations Procedures (SOP's)
Monitoring forms
External Document Name
Contracts with contractors perform activities that can have significant environmental impacts
Job Descriptions (+ employee roles / responsibilities)
Operating Permits
Material Safety Data Sheets
Federal & State Regulations; local ordinances
Industry Standards (e.g., ISO 14001, National Biosolids Program)

Document Review and Approval

All internal EMS documents shall be reviewed and approved by authorized personnel prior to release. Authorized for EMS document approval are the following functions:

- Executive director
- EMS Team

Distribution and maintenance of Controlled Documents

The following documents require a signature by the approver on the original hard copy:
- EMS manual
- CCMUA Mission and environmental policy

All other documents can be electronically approved by initials either in the header (new document) or in the revision history.

All controlled documents are listed in the "EMS Document List" (Appendix) with ID, Type, Document name, Document owner and approval date.

All documents are electronically stored on the main server in the "EMS" folder with defined access control for all users. Only the Executive Director, EMS team and IT Administrator have the right to alter, change and delete documents. All other employees have "read only" rights. Hardcopies of controlled documents are uncontrolled as indicated in the footer.

Revision of Documents

All EMS documents shall be reviewed and revised as necessary by document owners and relevant personnel. Departmental Managers shall report any proposed changes to the EMS for discussion.

All revised controlled documents shall be reviewed and approved by the authorized person prior to release.

The EMS Team ensures that the revised document is uploaded in the "EMS" folder and the obsolete file is moved to the "Archive" folder.

Control of External Documents

External reference documents not available on the company server (e.g. Laws and Regulations, Industry standards, External Communication, External input, Complaints, Notes) shall be properly collected and maintained by the EMS coordinator. The EMS Team informs affected department and decide about the further use of the internal documents

Computer Backup, Security and Control

The IT Administrator shall back up the server data on a frequent basis. The backup functionality shall be checked at least biannually.

Monitoring

All controlled documents are listed in the "EMS document master list" and stored on the CCMUA server system in the "EMS" folder. Obsolete documents are moved to the "Archive" folder which is not connected to the normal EMS access for all employees.

6 IMPROVEMENT PROCESSES

Continual improvement in performance is a fundamental principle in the CCMUA Sustainability Policy and a primary goal of our EMS. Improvement occurs through checking and reviewing performance to determine improvement opportunities.

Purpose and Content

This Section of the EMS Manual defines "Improvement" processes used to check and improve the performance of our EMS. These processes include:

- Objectives, Targets and Programs (for Improvement)
- Monitoring, measurement, analysis and evaluation
- Evaluation of Compliance
- Internal Audits
- Corrective and Preventive Action
- Management Review

Requirements

Requirements within the EMS Improvement processes are summarized below:

1. Determine specific and measurable objectives and targets for improving performance.
2. Assess conformance of activities and processes with EMS requirements.
3. Take Corrective or Preventive Action to prevent systemic problems from occurring or re-occurring.
4. Review the suitability, adequacy and effectiveness of the EMS; develop and implement recommendations for improving the EMS based on performance reviews.

6.1 Monitoring, measurement, analysis and evaluation

Purpose

Monitoring and measurement activities provide essential data for understanding CCMUA's environmental impacts, the adequacy of operational controls and progress on achieving objectives and targets. Analysis of the monitoring and measurement data provides essential data for evaluating trends in environmental performance and the effectiveness of the EMS.

Process Description

Each section of this manual provides a description of the monitoring activities associated with that section. Each manager is responsible for conducting the monitoring and measurement activities within their area of responsibility. The Operations and Maintenance group conducts sampling and analysis of influent, effluent and sludge waste. The Regulatory Compliance Officer reviews the data for evaluation of compliance. Progress on objectives and targets is monitored as described in CC-P2, and evaluated during the Management Review. The EMS team reviews monitoring and measurement data and conducts trends analysis in preparation for evaluation by the Executive Director and management team during the Management Review.

Monitoring

Records of monitoring, measuring, analysis & evaluation results are controlled according to our internal policy.

6.2 Evaluation of Compliance

Purpose

The results of monitoring and measuring activities provide essential data for the evaluation of compliance. The following procedure describes our approach and explains evaluation of compliance is connected to monitoring, measuring, analysis and evaluation.

This procedure applies to all department leads and employees being involved in the evaluation of compliance.

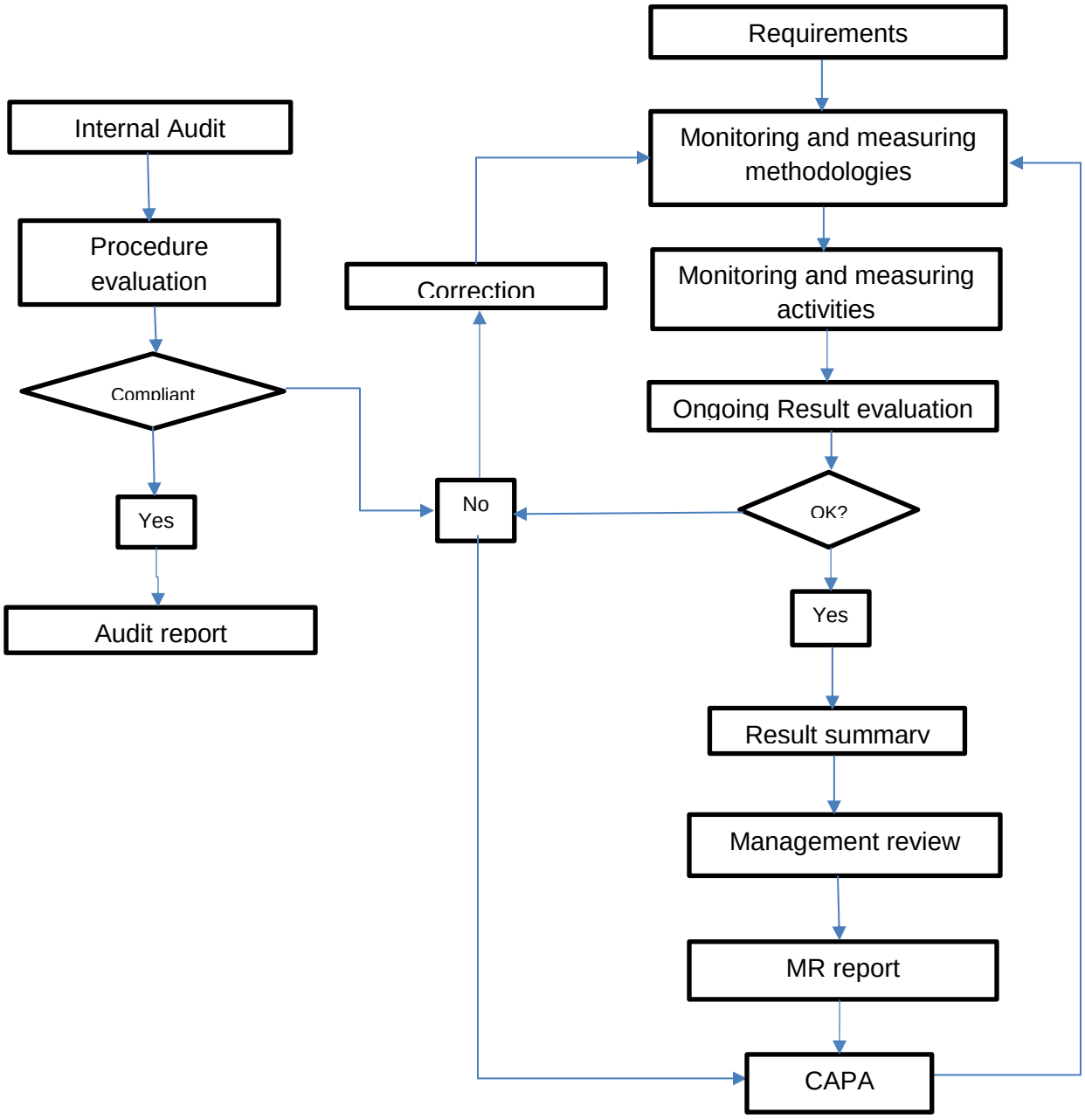
Responsibility

The Executive Director, EMS Team and senior management are responsible to evaluate compliance to EMS, ISO 14001, NBP, legal and other requirements frequently at least during management reviews. Further, in case of deviations, they are responsible to define effective corrective actions.

Procedure

Ongoing measuring activities and monitoring are necessary to gain real time data for compliance evaluation. Beside monitoring and measurement, the following methodologies are also used for evaluation of compliance:

- Internal and external audits
- Management reviews
- Analysis of data
- Environmental targets and objectives


Requirements
Internal Audit
Monitoring and measuring methodologies
Procedure evaluation
Correction
Monitoring and measuring activities
Compliant
Ongoing Result evaluation
Yes
No
OK?
Audit report
Yes
Result summary
Management review
MR report
CAPA

Compliance audits are conducted at least every three years for the purpose of determining the level of compliance with applicable environmental, health and safety regulations and permits and with other requirements identified in Section 3.2 of this Manual. Arrangements for compliance audits require Executive Director approval.

Monitoring

Records of monitoring, measuring, analysis & evaluation results and compliance audits are controlled according to our internal policy. Records may vary and can be filed as hard copies or electronic versions such as reports of Internal Audits and Management Reviews.

6.3 Internal Audits

Purpose

Internal audits are used to evaluate the EMS implementation status and performance, identify gaps where requirements are not being met and determine opportunities for improvement. The process includes determining the scope for internal audits, planning and conducting the audit, reporting results and correcting audit findings.

An Internal Audit is defined as an evaluation of an internal system or process and is very often conducted by internal auditors (employees of the company). An internal audit can also be conducted by external professional(s) who is qualified through education and/or experience in conducting audits, and knowledge of BMP and ISO 14001 requirements.

Internal Audit Program

The EMS Team is responsible to develop an internal audit program including scope, time and auditor selection. Further they are responsible to determine together with department managers corrective and preventive actions.

The Internal Auditors or Auditor Teams are responsible to prepare, conduct, monitor and communicate the results of the audits including suggestions for corrective and preventive actions. Further they are responsible to follow up on defined corrective actions to evaluate effective completion.

Department managers are responsible to develop corrective action plans for deficiencies defined during audits in cooperation with the EMS Team.

The EMS Team develops an internal audit program for use in assessing EMS performance and identifying opportunities for improvement. That program identifies the timing and scope of planned audits, such that:

a) areas / processes to be audited are based on the level of environmental, quality and/or regulatory risk within the process, changes affecting the organization, and the results of previous audits (i.e. if previous audits found that corrective action was necessary)
b) each EMS process is audited at least once every three years including the final destination of the sludge.

Evaluations of compliance with legal and other requirements are a special audit. These audits are conducted at least every three years for the purpose of determining the level of compliance with applicable environmental, health and safety regulations and permits and with other requirements

identified in Section 3.2 of this Manual. Arrangements for compliance evaluations require Executive Director approval.

The Internal Audit Schedule can be found in Appendix, CC-P14-D1.

Auditors are qualified to conduct internal audits through approval by the Executive Director. That approval verifies the auditors understand the desired purpose and scope of the audit, are sufficiently experienced and knowledge of BMP and ISO 14001 (including training) to conduct the audit objectively and impartially. Auditors may not audit their own work.

Procedure

The EMS Team directs and plans each internal audit, including:

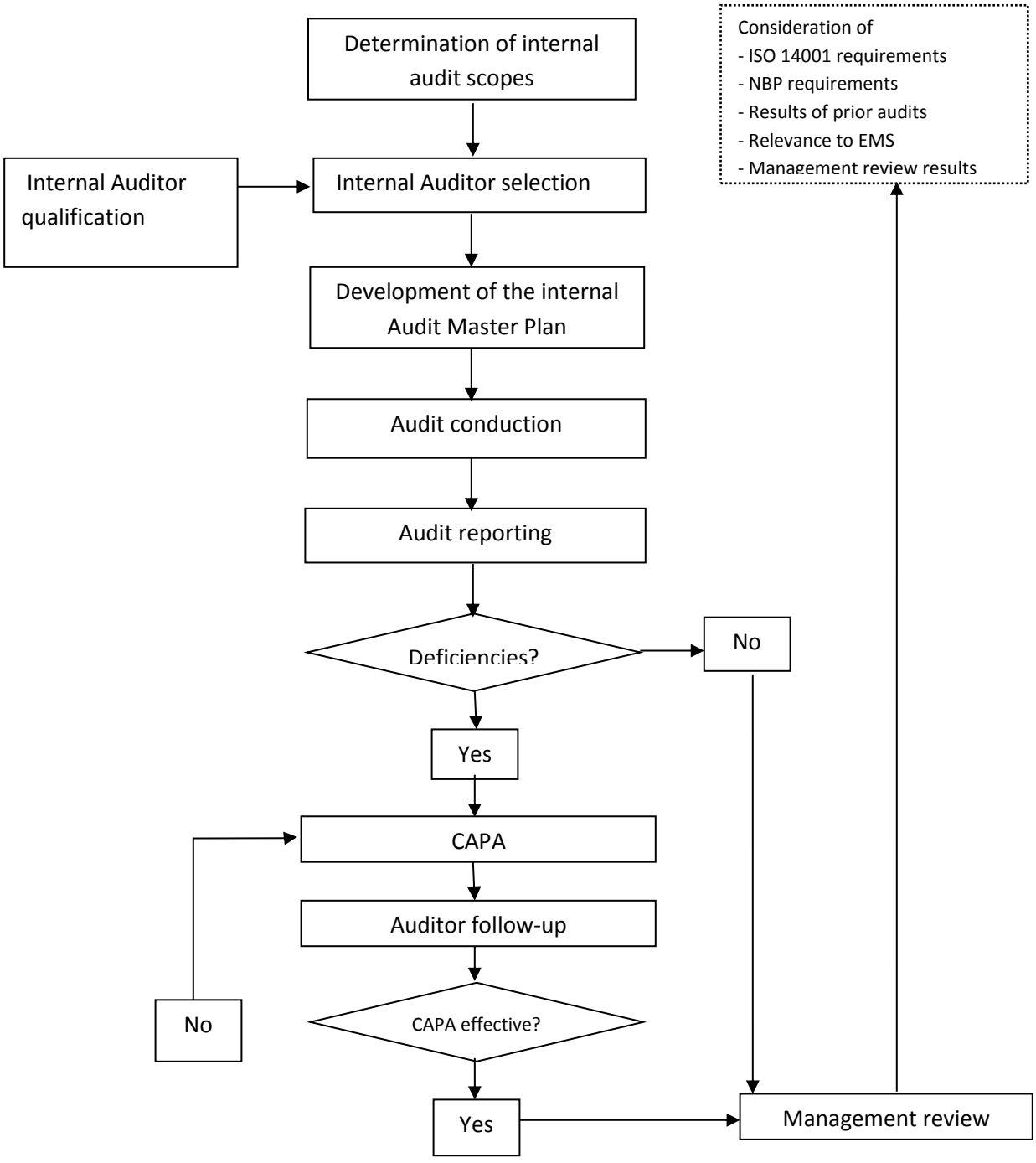
- The purpose, scope and timing of the audit
- The audit criteria
- Designation of the Lead Auditor and Audit Team. The independency of the auditor from the auditor from the audited area or scope is essential for the auditor selection.

Audit Results

The designated Lead Auditor reports the results of each audit to the EMS Team and managers responsible for each area being audited. The report summarizes the purpose(s), scope and timing for the audit and the Audit Team's conclusion(s) related to the audit purpose(s). The report also summarizes the Audit Team's findings, including recommendations for corrective or preventive action in response to those findings.

The EMS Team, assisted by the Lead Auditor, investigates each finding and determines and implements corrective / preventive action needed (see Corrective / Preventive Action below).

The following summarizes the Internal Audit Process;


Determination of internal audit scopes
Consideration of
- ISO 14001 requirements
- NBP requirements
- Results of prior audits
- Relevance to EMS
- Management review results
Internal Auditor qualification
Internal Auditor selection
Development of the internal Audit Master Plan
Audit conduction
Audit reporting
Deficiencies?
No
Yes
CAPA
Auditor follow-up
CAPA effective?
No
Yes
Management review

Monitoring

The designated Lead Auditor reports the results of each audit to the EMS Team and managers responsible for each area being audited. The report summarizes the purpose(s), scope and timing for the audit and the Audit Team's conclusion(s) related to the audit purpose(s). The report also summarizes the Audit Team's findings, including recommendations for corrective or preventive action in response to those findings.

The EMS Team and department managers assisted by the Lead Auditor, investigate each finding, determine and implement corrective/preventive action needed.

The EMS Team monitors progress of audits to ensure timely completion and reporting.

6.4 Nonconformity, Corrective / Preventive Action

Purpose

The Nonconformity (NC), Corrective Action (CA) and Preventive Action (PA) process describes how we deal with actual and potential nonconformities to investigate EMS problems and/or deficiencies and to determine actions needed to prevent the problem from occurring (preventive action) or from recurring (corrective action).

A nonconformity (NC) is defined as a non-fulfillment of a regulation.

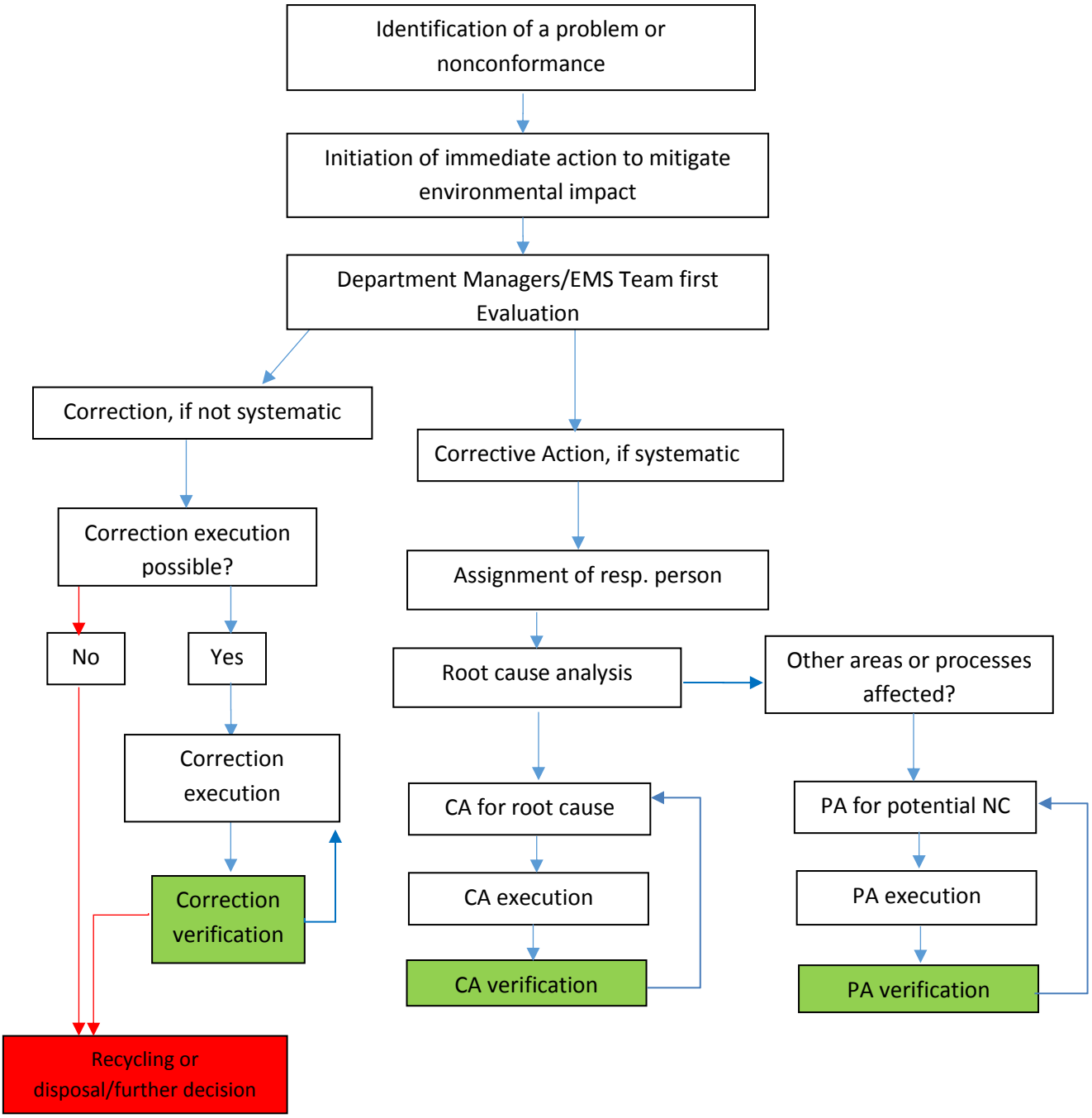
This process covers all waste water treatment and biosolids procedures at Camden County MUA.

Responsibility

All employees are entitled and responsible to highlight any non-conformance or potential non-conformance and report it to their supervisors.

Process Description

The process is used to investigate EMS problems or non-conformance and determining action needed to prevent the problem from occurring (preventive action) or from re-occurring (corrective action). The process is illustrated below:


Identification of a problem or nonconformance
Initiation of immediate action to mitigate environmental impact
Department Managers/EMS Team first Evaluation
Correction, if not systematic
Corrective Action, if systematic
Correction execution possible?
Assignment of resp. person
No
Yes
Root cause analysis
Other areas or processes affected?
Correction execution
CA for root cause
PA for potential NC
Correction verification
CA execution
PA execution
CA verification
PA verification
Recycling or disposal/further decision

Problem Correction

In many cases problems can be corrected without extensive investigation or cause analysis. Equipment problems and minor gaps in performance are examples of these types of problems. The manager responsible for the area / operation where a problem has been identified takes action to immediately correct that problem.

Problems Requiring Corrective / Preventive Action

The following types of problems require further investigation, cause analysis and corrective and/or preventive action within our EMS:

- Any incident or accident requiring external assistance.
- Any noncompliance with legal or other requirements.
- Any nonconformance finding from third party audits or finding from internal audit(s) that the EMS Team determines requires corrective action.
- Any legitimate public or customer complaint.
- Any problem for which immediate correction is not sufficient to prevent it from repeating. Typically these problems are systemic and identified through trend analysis by the manager involved.
- Any other problem that the EMS Team determines is systemic and requires corrective or preventive action (e.g. failure to achieve an objective without reasonable reasons).
- Any problem or non-conformance with an environmental impact.

Cause Analysis & Corrective / Preventive Action

The cause of problem(s) is analyzed when the problem is systemic. A system problem exists if the same, or related, problem is repeated despite corrections, or when EMS nonconformances occur. Various methods are available to determine the cause of system problems, including the "5 whys" method. We also take into consideration future occurrences based on data and experience to define preventive actions.

The person(s) assigned by the Department Manager/EMS Team to assess system problems:

1. Completes the Corrective / Preventive Action form (see Appendix of this manual), including identification of the primary (most likely) cause (also called "root cause") and contributing factors after a successful root cause assessment has been conducted. Participants for the root cause assessment can vary due to the nature or area or the non-conformance or problem.
2. Determines with a defined team if the problem or non-conformance might occur in similar or other processes which could cause future non-conformances.
3. Determines action(s) needed to eliminate the cause and meet the defined target, including responsibilities and timing.
4. In case other areas or processes might have the potential for future non-conformances determines preventive action(s) to control future problems.
5. Evaluates progress in completing the Corrective / Preventive Action and ensures the action is completed as planned.
6. Verifies the effectiveness of completed action in eliminating the identified cause.
7. Defines additional action in case the effectiveness of a corrective and preventive action cannot be verified.

The EMS Team retains records of planned and completed corrective / preventive action and periodically analyses these records to determine trends and possible deeper causes of problems that need to be corrected.

Monitoring

All corrective and preventive actions will be monitored by the EMS Team in our CAPA monitoring form including root cause analysis results, timelines, responsibilities and effectiveness evaluation.

6.5 Management Review

Purpose

The Management Review process defines how the EMS Team and senior management reviews the performance of the EMS at planned intervals to ensure that it is suitable, adequate and effective. These reviews will assess opportunities for improvement and can lead to implementation of changes in the EMS and/or its processes.

Process Description

The EMS Team reviews the performance of our EMS as described below to ensure it is suitable, adequate and effective. These reviews can lead to implementation of changes in the EMS and/or its processes.

The Management Reviews are conducted biannually.

The Management representative in the role of the EMS Team plans these EMS performance reviews and informs department managers in sufficient time to prepare the necessary data and results to be reviewed during the meeting. The senior management is responsible to conduct the management reviews with the EMS Team.

The following job holders are mandatory participants of every Management Review:

1. Management representative/EMS Team
2. Executive Director
3. Director of O&M
4. Director or O&M wastewater

The EMS Coordinator(s) plans the EMS performance reviews so they include at least the following subjects, as they apply to the scope of our EMS.

1. Follow-up actions from previous management reviews
2. Changing circumstances related to:
    a. Organizational context issues and associated risks and opportunities;
    b. Interested party requirements; and
    c. Significant environmental aspects.
3. Trends in Environmental performance (e.g. key performance indicators), including
    a. Nonconformities and status of Corrective / Preventive Actions;
    b. Monitoring and measurement results; and
    c. Results of internal audits and evaluations of compliance with legal requirements and with other requirements.
4. Adequacy of resources.
5. Relevant communication(s) from external interested parties, including complaints.

6. The extent to which objectives and targets have been met and the need for new or updated objectives.
7. Recommendations for improvement.

The above subjects can be addressed in a single management review or in multiple reviews over time. Each subject must be reviewed at least annually.

Outputs of the management review are documented in the Management Review Report and address the following, as applicable:

1. EMS team conclusions on the suitability, adequacy and effectiveness of the EMS.
2. Decisions on improvement areas to pursue, including opportunities to improve integration with business processes.
3. Changes needed in the EMS, including resources.
4. Actions to be taken if needed when objectives are not achieved.
5. Implications for the organizations' strategic direction.

When recommendations for improvement are accepted, the EMS Team prepares action plans, including resources, responsibility and timing, for implementing the improvement. The EMS Team also monitors progress in completing the recommended improvement and takes action to correct any inadequate progress.

The EMS Team records changes in the EMS and/or its processes, including changes to this EMS Manual, and communicates the change to affected persons.

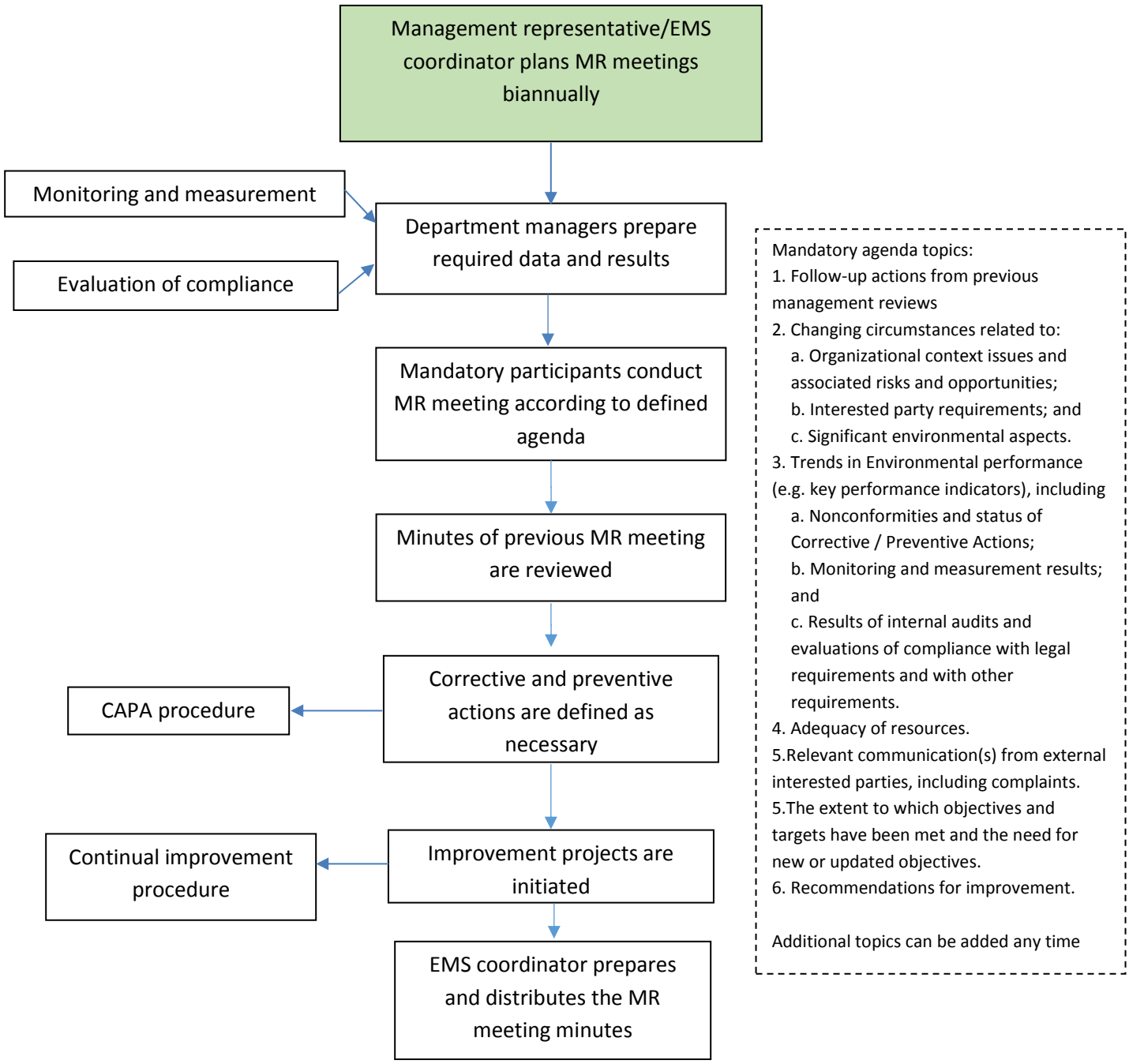
All employees are responsible to execute action as defined by the management review.

Monitoring Achievement of Objectives and Targets

All results and defined actions from management reviews will be monitored in the management review report. See Appendix, CC-P15-F1, Management Review Report. In addition, defined CAPA's will be monitored in the CAPA monitoring form including root cause analysis results, timelines, responsibilities and effectiveness evaluation. See Appendix, CC-P15-F1, CAPA Monitoring Form.

When developing objectives, the EMS Team assigns an individual to monitor progress in achieving each objective. That individual periodically assesses progress in completing the action plan steps and achieving the objective and reports that progress to the EMS Team as requested.

The EMS Team determines action needed in response to inadequate progress in achieving an objective. This need may include addressing the cause through the Corrective / Preventive Action process.


Management representative/EMS coordinator plans MR meetings biannually
Monitoring and measurement
Evaluation of compliance
Department managers prepare required data and results
Mandatory participants conduct MR meeting according to defined agenda
Minutes of previous MR meeting are reviewed
Corrective and preventive actions are defined as necessary
CAPA procedure
Improvement projects are initiated
Continual improvement procedure
EMS coordinator prepares and distributes the MR meeting minutes
Mandatory agenda topics:
1. Follow-up actions from previous management reviews
2. Changing circumstances related to:
a. Organizational context issues and associated risks and opportunities;
b. Interested party requirements; and
c. Significant environmental aspects.
3. Trends in Environmental performance (e.g. key performance indicators), including
a. Nonconformities and status of Corrective / Preventive Actions;
b. Monitoring and measurement results; and
c. Results of internal audits and evaluations of compliance with legal requirements and with other requirements.
4. Adequacy of resources.
5.Relevant communication(s) from external interested parties, including complaints.
5.The extent to which objectives and targets have been met and the need for new or updated objectives.
6. Recommendations for improvement.
Additional topics can be added any time

6.6 Continual Improvement – Updating the EMS

Purpose

Continual improvement is essential for an effective EMS implementation and maintenance. The continual improvement approach was described in Section 1.3 and shows how we ensure that our system stays current, adapts to changing circumstances and reflects our leanings.

Process Description

The following 'Check' processes provide input on areas that may need improvement:

- Monitoring, Measurement, Analysis and Evaluation results
- Evaluation of Compliance findings
- Internal Audit findings
- Complaints

The continual improvement process covers all elements of the CCMUA EMS.

The EMS Coordinator is responsible to update the EMS according to continual improvement results. The Senior management/Executive director are responsible to periodically review and evaluate continual improvement opportunities and decide on the priority areas for implementation.

All employees are encouraged to highlight areas and opportunities to help improve the CCMUA EMS and/or business activities.

Monitoring

Continual improvement suggestions and ideas can be communicated and monitored in various forms from email to complete reports.

All decisions and results will be monitored either in our CAPA file or according to our documentation policy, especially in the revision history.