

Suggested Contents of a Water Treatment Plant Operations Manual:

1. Introductory section:
 - a. Purpose of the manual
 - b. List of positions filled by plant personnel and an organizational structure chart
 - c. General plant safety policies and procedures
 - d. An overview and map of the plant facilities
 - e. Brief introduction to general water treatment processes
 - f. Overview of treatment processes used at this plant
 - g. Overview of the operational policies and techniques used at this plant
 - h. Description of maintenance policies, procedures and processes
 - i. Information about documentation and training that supports operation of the plant
 - j. A list of standard operating procedures for this plant

2. Overview and introduction to local and remote control systems used at this plant
 - a. Local control panels
 - b. Process measurements
 - c. Alarms
 - d. Control loops
 - e. Permissives and trips
 - f. Information on loop drawings and numbering systems
 - g. Description of the control system hardware including instrumentation, local controllers (PLCs, VFDs, etc), data communications, computer systems, HMI software (screens, windows, graphics), backup systems, etc

3. Sections for each operational unit of the plant (e.g. low lift pumping, screening, clarification, etc). Within each section, include:
 - a. Statement of the purpose of the area within the overall plant operation
 - b. Safety policies and procedures related specifically to this area
 - c. Description of the equipment and systems in the area (may include equipment lists and specifications)
 - d. Description of how the area functions to accomplish its purpose
 - e. Description of local controls for the area (include what controls are available and what they do, not how they are operated)
 - f. Description of remote controls related to the area (introduce the user interfaces, the information and controls that are available and what they do, not how they are used to operate the area)
 - g. Explanation of the operating goals of the area (include what you are trying to accomplish when operating the area, list acceptable operating parameters, critical control points and operating limits, applicable standards and regulations)
 - h. Listing of operating policies and techniques used to operate the area safely, efficiently, and within specifications

- i. Operating procedures for each system within the area, including local and remote operating procedures (This section includes all procedures, simple and complex, and may overlap with SOPs, but does not include all the related detail that will be included in SOPs)
4. Sections for each chemical feed system used at this plant, including:
 - a. Safety information related to chemicals and procedures
 - b. Description of chemicals used and how they are used in this process
 - c. Description of chemical feed systems including the equipment, processes, local and remote controls, and operating procedures
 - d. Information and procedures for chemical handling, receiving and off-loading
 - e. Procedures for calculating chemical addition dosages and feed rates
5. Sections on the distribution system and reservoirs, including
 - a. Statement of the purpose of the system within the overall plant operation
 - b. Safety policies and procedures related specifically to this system
 - c. Description of the equipment and systems in the system (may include equipment lists and specifications)
 - d. Description of how the system functions to accomplish its purpose
 - e. Description of local controls for the system (include what controls are available and what they do, not how they are operated)
 - f. Description of remote controls related to the system (introduce the user interfaces, the information and controls that are available and what they do, not how they are used to operate the area)
 - g. Explanation of the operating goals of the system (include what you are trying to accomplish when operating the area, list acceptable operating parameters, critical control points and operating limits, applicable standards and regulations)
 - h. Listing of operating policies and techniques used to operate the system safely, efficiently, and within specifications
 - i. Operating procedures for each system within the system, including local and remote operating procedures (This section includes all procedures, simple and complex, and may overlap with SOPs, but does not include all the related detail that will be included in SOPs)
6. A section describing regular operator duties including sampling, analysis, inspections, maintenance tasks performed by operators, cleaning, etc)
7. A glossary of terms
8. An index

Optional:

9. Sections on auxiliary systems such as:
 - a. Electrical power systems

- b. Plant air systems
- c. Emergency systems (fire, intercom, etc)
- d. Security systems
- e. HVAC systems
- f. Other related systems