

HACCP in Distribution System Regulations

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Water**

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Overview

- **Background**
- **Process for Analyzing HACCP Approach**
- **HACCP in Distribution Systems**
- **Examples of Distribution System HACCP Hazard Assessments, Controls, Monitoring and Verification**
- **Next Steps**

Background

- **NPDWR Review and Revisions Required in SDWA**
 - “not less often than every 6 years, review and revise, as appropriate, each NPDWR...”
- **M-DBP FACA Agreement (Sept. 2000)**
 - **Finished water storage and distribution systems may pose public health risks**
 - **Water quality problems can be related to infrastructure problems; Aging distribution systems may increase infrastructure problem risks**
 - **As part of TCR 6-year review process, EPA should:**
 - Evaluate available data and research on aspects of distribution systems that may create risks to public health
 - Work with stakeholders to initiate a process for addressing cross-connection control and backflow prevention requirements
 - Consider additional distribution system requirements related to significant health risks

Background

- **Six-Year Review Notice of Intent Published April 17, 2002**
 - Requested comment on review of 69 pre-1997 NPDWRs
 - Preliminary decision to revise TCR
 - Opportunities exist for reducing implementation burden while assuring public health protection
 - Analyzed comments received on preliminary decision
- **Final determination published in Federal Register July 18, 2003**
 - Based on the Agency's initial review, public comments received and new information, EPA believes it is appropriate to revise the TCR
 - EPA also plans to consider requirements to address the finished water quality in the distribution system in a combined rulemaking effort with the revisions to the TCR

Process for Analyzing HACCP Approach

- **Evaluate Concepts as Applied in Other Industries**
- **Evaluate Current Applications in Drinking Water Systems**
- **Prepare Issue Paper for Discussion**
- **Engage Stakeholders in Potential Application to Distribution Systems**
 - **Feedback from partners on opinions and experiences**

HACCP in Distribution Systems

- **Use of HACCP in Other Industries**
- **Steps and Principles of the HACCP System**
 - Five initial steps in the HACCP process
 - Seven principles of HACCP
- **Current Uses of HACCP in a Regulatory or Guideline Framework**
- **Benefits of HACCP**

HACCP in Distribution Systems

- **Principles of HACCP Plans**

- Hazard assessments
- Identify critical control points
- Establish critical limits
- Identify monitoring procedures
- Corrective action procedures
- Verification and validation
- Documentation and record keeping

- **Supporting Programs**

- **Case Studies of HACCP in Distribution Systems**

- **Approaches for Obtaining Stakeholder Input**

DS Hazard Assessments Examples

- **Cross-Connection Inspections**
- **Modeling**
 - Pressure analysis
 - Residual maintenance
 - Hydraulics
- **Sanitary Surveys**
 - Distribution system condition assessment
 - Proximity to sources of contamination
- **Materials and Their Manufacturing Processes**
- **Initial Distribution System Evaluation (IDSE)**
- **Comprehensive Performance Evaluations (CPE)**

Identification of DS CCPs

Examples

- **Analysis of Appropriate Monitoring Locations in Distribution Systems**
- **Development of Site Sampling Plans**

DS Control Examples

- **Cross-Connection Control and Backflow Prevention**
- **Positive Pressure Maintenance**
- **Use of Standards**
 - **Construction**
 - **Return to service**
- **Water Age Reduction Strategies**
- **Ammonia Dosing Control**

DS Control Examples

- **Optimization of Treatment (e.g., AOC Control)**
- **Maintenance of Disinfectant Residuals**
- **Area-Wide Optimization Programs (AWOP)**
- **Development of Standard Operating Procedures (SOPs)**
- **Training and Oversight of Staff**

DS Monitoring and Verification

Examples

- **Monitoring**
 - **Pressure**
 - **Water quality parameters**
 - pH
 - Temperature
 - Organic carbon
 - **Disinfectant residuals**
 - **Targeted contaminants based on site specific concerns**
- **Verification Against SOPs**

Next Steps

- **Complete Analysis of HACCP Approach Relevant to Distribution Systems**
- **Evaluate Applicability of HACCP Concepts in Revisions to TCR and Potential Distribution System Requirements**
 - **Collect and analyze information**
 - **Continue discussions with stakeholders and partners**
- **Rule Proposal - 2006**

Contact

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