

# PROPOSED RULEMAKING

## ENVIRONMENTAL QUALITY BOARD

[25 PA. CODE CH. 109]

### Safe Drinking Water; Filter Backwash Recycling Rule (FBRR)

The Environmental Quality Board (Board) proposes to amend Chapter 109 (relating to safe drinking water). The proposed rulemaking in general pertains to public water systems using surface water or groundwater under direct influence of surface water (GUDI); utilizing direct or conventional filtration processes; and recycling backwash water, sludge thickener supernatant or liquid from dewatering processes.

This proposed rulemaking is intended to further protect public health by requiring public water systems (PWS), where needed, to institute changes to the return of recycle flows to a plant's treatment process that may otherwise compromise microbial control. The FBRR requires that recycled filter backwash water, sludge thickener supernatant and liquids from dewatering processes must be returned to a location so that all processes of a system's conventional or direct filtration including coagulation, flocculation, sedimentation (conventional filtration only) and filtration are employed. Systems may apply to the Department of Environmental Protection (Department) for approval to recycle at an alternate location.

The proposal was adopted by the Board at its meeting of December 17, 2002.

#### A. Effective Date

These proposed amendments will go into effect upon publication in the *Pennsylvania Bulletin* as final-form rulemaking.

#### B. Contact Persons

For further information, contact Jeffrey A. Gordon, Chief, Division of Drinking Water Management, P. O. Box 8467, Rachel Carson State Office Building, Harrisburg, PA 17105-8467, (717) 772-4018; or Marylou Barton, Assistant Counsel, Bureau of Regulatory Counsel, P. O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Information regarding submitting comments on this proposal appears in Section H of this preamble. Persons with a disability may use the AT&T Relay Service by calling (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This proposal is available electronically through the Department's website (<http://www.dep.state.pa.us>).

#### C. Statutory Authority

This proposed rulemaking is being made under the authority of section 4 of the Pennsylvania Safe Drinking Water Act (act) (35 P. S. § 721.4), which grants the Board the authority to adopt rules and regulations governing the provision of drinking water to the public and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-7 and 510-20).

#### D. Background and Purpose

The Department promulgated the Filtration Rule in March 1989 to address the rising number of waterborne disease outbreaks in this Commonwealth. The rule required public water systems with surface water sources to

filter and disinfect the water before use by the public, cover finished water reservoirs, perform treatment performance and water quality compliance monitoring and provide public notification of violations. The rule also established design and performance standards for the filtration and disinfection treatment techniques intended to protect against the adverse health effects of exposure to *Giardia lamblia*, viruses and legionella, as well as many other pathogenic organisms.

The Department also promulgated the Interim Enhanced Surface Water Treatment Rule (IESWTR) on July 21, 2001. This rule is intended to improve the control of microbial pathogens, specifically including the protozoan *Cryptosporidium parvum*, in drinking water. The IESWTR applies to PWSs serving 10,000 or more people and which use surface water GUDI. Key provisions include 99% *Cryptosporidium* removal requirements for systems that filter; strengthened combined and individual filter effluent turbidity performance standards; disinfection benchmark provisions to assure continued levels of microbial protection while facilities take the necessary steps to comply with new disinfection byproduct standards; inclusion of *Cryptosporidium* in the definition of GUDI; and sanitary surveys for all surface water systems, regardless of size.

Water treatment plants generate various waste streams during the water production process as well as during subsequent waste handling procedures. Waste streams can be a large volume, such as spent filter backwash water, which can make up more than 3% of plant production, or very small, like streams of filtrate from a filter press, which may represent less than 0.1% of plant production. The waste streams can be handled in a variety of ways. Some treatment plants recycle the wastewater to the beginning of the treatment cycle, where the water will be treated again. Other plants waste it by sending it into the local wastewater treatment plant. Still other plants obtain a discharge permit and release the water to a river or stream after some additional treatment. Increasingly stringent discharge requirements, expensive chemicals and conservation efforts have forced many plants to consider or implement recycling. Recycling of water treatment plant waste streams is an acceptable practice of good water conservation management. This proposed rulemaking does not mandate recycling nor does it intend to discourage the recycling of waste streams.

When a facility recycles filter backwash water, it reintroduces contaminants into the treatment processes. Poor recycle practices can degrade influent water quality and impair treatment process performance. The 1996 amendments to the Federal act required the Environmental Protection Agency (EPA) to promulgate a regulation governing the recycling of filter backwash water. The EPA promulgated the Federal FBRR on June 8, 2001. The Federal FBRR addresses filter backwash water and two additional recycle streams of concern, sludge thickener supernatant and liquids from dewatering processes. The EPA believes that establishing a regulation will improve performance at filtration plants by reducing the opportunity for recycle practices to adversely affect plant performance in a way that would allow microbes such as *Cryptosporidium* to pass through into finished water. While the Commonwealth's Filtration Rule and the IESWTR contained treatment technique requirements designed to address microbial pathogens such as *Giardia*

and *Cryptosporidium*, neither the Commonwealth's Filtration Rule nor the IESWTR addressed filter backwash recycling practices. About 120 surface water treatment plants using conventional or direct filtration practice some form of waste stream recycling in this Commonwealth.

The Department is proposing to incorporate the provisions of the Federal FBRR into the Commonwealth Safe Drinking Water Regulations to retain primacy for enforcement responsibility of safe drinking water. The proposed rulemaking will provide additional protection against disease-causing organisms (pathogens) in drinking water. This action would address risks associated with certain recycle practices in the least burdensome, most effective and simplest means possible. The proposed amendments will allow recycle practices to be conducted in a manner that does not upset the chemical treatment and coagulation process vital to the performance and contaminant removal capability of a filtration plant. The proposed amendments will also assure that *Cryptosporidium* oocysts in recycled water, as well as source water, receive the full benefit of well-operated treatment processes to achieve at least 99% *Cryptosporidium* removal.

The proposal will improve public health by increasing the level of protection from exposure to *Cryptosporidium* and other pathogens in drinking water supplies through improvements in recycling processes at water treatment plants. This will decrease the likelihood of endemic illness from *Cryptosporidium* by several thousand cases annually, thus reducing health care costs. Implementation of these provisions is expected to reduce the potential for oocysts getting into the finished water and causing cases of *Cryptosporidiosis*. Exposure to other pathogenic protozoa, such as *Giardia*, or other emerging microbial pathogens is likely to be reduced by this proposed rulemaking as well.

In terms of occurrence, *Cryptosporidium* is common in the environment. Most surface water sources contain, or are vulnerable to, *Cryptosporidium* oocyst contamination at one time or another. Since some people are carriers, oocysts may enter the water through treated and untreated sewage outfall. Other sources of *Cryptosporidium* contamination are those animals that live in or near the water who are likely to deposit oocysts directly into the drinking water supplies. Livestock are notorious carriers of *Cryptosporidium*. Runoff from watersheds allows transport of this pathogen into water bodies used as sources for drinking water treatment plants. Complicating this matter is *Cryptosporidium*'s resistance to standard disinfection practices.

In humans, *Cryptosporidium* may cause a severe infection that can last several weeks. It may cause the death of individuals who have a weaker immune system due to age, cancer treatment, AIDS and antirejection organ replacement drugs. In 1993, *Cryptosporidium* caused over 400,000 people in Milwaukee to experience serious intestinal illness. More than 4,000 were hospitalized and at least 50 deaths were attributed to the *Cryptosporidium* outbreak. There have also been *Cryptosporidiosis* outbreaks in Nevada, Oregon and Georgia over the past several years.

The draft proposed rulemaking was submitted for comments to the Water Resources Advisory Committee (WRAC) on September 11, 2002. The WRAC approved the regulations with the condition that the Department consider the WRAC comments. The draft proposed rule was submitted for comments to the Technical Assistance Cen-

ter (TAC) Advisory Board on August 13, 2002. TAC provided comments at the meeting, which have been addressed.

#### *Advisory Committee Recommendations*

1. TAC wanted to know the breakdown of the 120 affected PWSs.

The Department conducted a survey of PWSs in this Commonwealth using conventional filtration or direct filtration to determine recycling practices in this Commonwealth. A survey of 243 filtration systems shows that about 120 of the systems practice some form of recycling. The estimated breakdown of this group is as follows:

- Less than 3,300 = 43 systems
- 3,300 to 10,000 = 29 systems
- Greater than 10,000 = 48 systems.

2. TAC wanted to know the average cost of repairs for systems making capital improvements.

According to the EPA's National estimates as published in the Preamble of the FBRR (Federal Register, Vol. 66, No. 111), 371 systems Nationwide will have a total annualized cost of \$5.8 million for capital improvements to recycle return location. According to the recycle survey conducted by the Department for this Commonwealth's filtration systems, it is estimated that about 30 systems will need capital improvements to recycle return location.

The ratio of Commonwealth to Nationwide is 30/371 systems = 0.08.

The Federal estimate is multiplied by the ratio to get the Commonwealth's estimate, such as:

Estimated annualized Nationwide cost for capital improvements to recycle location = \$5.8 million

Estimated annualized cost for capital improvements to recycle location to Commonwealth systems =  $\$5.8 \times 0.08 = \$464,000$

3. TAC wanted to know if the December 8, 2003, implementation date is correct.

The January 4, 2003, date in § 109.701(h) was a typographical error. The correct date should be December 8, 2003.

PWSs using conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant or liquids from dewatering processes, shall notify the Department in writing by December 8, 2003.

4. WRAC wanted definitions for "recycle" and "capital improvement" included in the regulation.

The definitions have been added to the proposed rulemaking. A definition for "recycle flows" was also added.

5. WRAC wanted the Department to include in the preamble that recycling is a good practice. They noted that the practice of recycling is good management conservation and should not be discouraged.

A statement has been added to the third paragraph of this section.

6. WRAC wanted the Department to send the proposed rulemaking to "stakeholder groups" in this Commonwealth for review.

The EPA involved a National stakeholder group during development of the FBRR. The proposed rulemaking is not more stringent than the Federal rule. The stakeholder groups have the opportunity to review and com-

ment on the proposed rulemaking. Therefore, there is no need to have a separate Commonwealth stakeholder group review the proposed rulemaking.

7. WRAC wanted the Department to exempt systems that provide membrane filtration of the filter backwash wastes, and the like, and use the filtrate as finished water (that is, send filtrate to the chlorine contact tank, rather than to the head of the plant, from the provisions of the backwash recycling rule.)

The Federal FBRR requires regulated recycle streams to be returned through all the processes of a system's existing conventional or direct filtration plant or at an alternate recycle location approved by the state. Compared to the source water, the waste streams have significantly higher levels of contaminants including *Cryptosporidium* oocysts and *Giardia* cysts. Separate treatment of the wastewater reduces the number of microbial and pathogenic organisms prior to recycle and, therefore, significantly reduces the risk associated with passing these organisms through the conventional or direct filtration plant in the event of a hydraulic surge, for example. Even with failure of the wastewater treatment, the barriers provided by conventional and direct filtration will help to reduce the risk of passing cysts and oocysts. If the treated recycle water was discharged or recycled directly to the finished water, any failure of the membrane filtration treatment would allow the discharge of significant amounts of cysts and oocysts which would result in a significant health risk to the consumer. Therefore, the Department does not consider the finished water as an acceptable alternative recycle return location.

The Federal Safe Drinking Water Act (42 U.S.C.A. § 300g-2(a)) requires that primary enforcement responsibility states, such as the Commonwealth, adopt EPA regulations no later than 2 years after EPA promulgation. The EPA may approve an extension of up to 2 years for states that: 1) lack legislative or regulatory authority to enforce the new requirements; 2) lack program capability to implement the new regulations; or 3) are adopting two or more regulations at the same time.

The final Federal FBRR was published at 63 FR 31086 (June 8, 2001). The Department is submitting a primacy extension request to the EPA to adopt regulations implementing the FBRR by June 8, 2004. It is expected that the EPA will grant the extension because the State is adopting two or more EPA regulations at the same time. If the EPA grants the June 8, 2004, extension, then failure to adopt the FBRR by this extension date may result in the Commonwealth losing its primary enforcement responsibility.

#### E. Summary of Regulatory Requirements

The proposed amendments reflect the new Federal requirements. The amendments are being proposed because there is no language currently in Chapter 109 that addresses the new Federal requirements.

The Safe Drinking Water Program plans to involve and inform the public of the proposed amendments through publication in the *Pennsylvania Bulletin*. The Department will also post notice and information about the proposed amendments on the Department's website at [www.dep.state.pa.us](http://www.dep.state.pa.us). In addition, safe drinking water program staff is prepared to attend public meetings if invited to do so.

Major components of the proposed amendments include the following provisions:

#### § 109.202(h) (relating to State MCLs, MRDLs and treatment technique requirements)

This subsection requires all PWSs affected by this proposed rulemaking to return affected recycle flows through the processes of the system's existing conventional or direct filtration system as defined in § 109.1 (relating to definitions) or at an alternate location approved by the Department by June 8, 2004. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements shall be completed by June 8, 2006.

#### § 109.701(h)(i) (relating to reporting and recordkeeping)

This subsection requires all PWSs affected by this proposed rulemaking to notify the Department in writing by December 8, 2003, if the system recycles spent filter backwash water, thickener supernatant or liquids from dewatering processes.

Submitted information shall include a plant schematic showing the origin of all flows, which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant and liquids from dewatering processes), the hydraulic conveyance used to transport them and the location where they are reintroduced into the treatment plant.

The PWSs shall also submit to the Department the typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm) and Department approved operating capacity for the plant where the Department has made the determinations.

#### § 109.701(h)(2)

This paragraph requires affected PWSs to collect and retain on file by June 8, 2004, the following recycle flow information for Department review and evaluation: copy of the recycle notification and information submitted to the Department; list of all recycle flows and the frequency with which they are returned; average and maximum backwash flow rate through the filters; and average and maximum duration of the filter backwash process in minutes.

Also, to be retained for Department review are typical filter run length and a written summary of how filter run length is determined; the type of treatment provided for the recycle flow; data on the physical dimensions of the equalization or treatment units, or both, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

#### F. Benefits, Costs and Compliance

##### Benefits

The proposed amendments will benefit customers of PWSs, which utilize direct or conventional filtration, use surface water or GUDI sources, and practice recycling. Currently, there are about 120 systems in this Commonwealth serving water to about 5,178,300 people that meet these criteria.

The economic benefits of the FBRR derive from the increased level of protection to public health. The primary benefits of the proposed rulemaking come from reductions in the risk of illness from microbial pathogens in drinking water. In particular, FBRR focuses on reducing the risk associated with disinfection resistant pathogens, such as *Cryptosporidium*.

Available literature research demonstrates that increased hydraulic loading or disruptive hydraulic currents

such as may be experienced when plants exceed operating capacity or when recycle is returned directly into the sedimentation basin can disrupt filter and sedimentation performance. The goal of the proposed amendments is to improve public health by increasing the level of protection from exposure to *Cryptosporidium* and other pathogens (that is, *Giardia* or other waterborne bacterial or viral pathogens) in drinking water supplies through improvements in the recycling process at water systems. Implementation of these provisions is expected to reduce the potential for oocysts getting into the finished water and causing cases of *Cryptosporidiosis*. Exposure to other pathogenic protozoa, such as *Giardia*, or other emerging microbial pathogens is likely to be reduced by this proposed rulemaking as well.

In addition to preventing illnesses, the proposed rulemaking is expected to have other nonhealth related benefits. These benefits result from avoiding nonhealth related costs associated with waterborne disease outbreaks. During an outbreak, local governments and water systems shall issue warnings and alerts and may need to provide an alternative source of water. Systems also face negative publicity and possible legal costs. The monetary costs associated with an outbreak can be difficult to quantify and will vary with a host of criteria. However, one study of a *Giardia* outbreak in Luzerne County estimated these nonhealth related costs to be quite significant. This study estimated losses to individuals due to actions taken to avoid the contaminated water at between \$19 million and \$49 million, in 1984 dollars (\$31 million—\$81 million in 2000 dollars). Losses due to averting actions for restaurants and bars totaled \$1 million and \$0.6 million for schools and other businesses, in 1984 dollars. The burden for government agencies was \$230,000 and the outbreak cost the water utility an estimated \$1.8 million, again in 1984 dollars.

*Compliance Costs*

Increased costs will be borne by the regulated community for systems making capital improvements to modify recycle location. Additional training, permitting, surveillance and compliance assistance costs will also be borne by the Department.

The consumers of water supplied by about 120 affected PWSs using surface water or GUDI; utilizing direct or conventional filtration processes; and recycling backwash water, sludge thickener supernatant or liquid from dewatering processes may experience higher water use rates associated with costs for capital improvements to modify recycle locations. The actual increase in water use rates will depend on a number of factors, including population served and type of improvements done.

*Compliance Assistance Plan*

The Safe Drinking Water Program utilizes the Pennsylvania Infrastructure Investment Authority Program to offer financial assistance to eligible public water systems. This assistance is in the form of a low-interest loan, with some augmenting grant funds for hardship cases. Eligibility is based upon factors such as public health impact, compliance necessity and project/operational affordability.

*Paperwork Requirements*

The Department's current data forms will facilitate any additional monitoring and reporting or paperwork.

*F. Sunset Review*

These regulations will be reviewed in accordance with the sunset review schedule published by the Department

to determine whether the regulations effectively fulfil the goals for which they were intended.

*G. Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), the Department submitted a copy of the proposed rulemaking on February 21, 2003, to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the Senate and House Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey any comments, recommendations or objections to the proposed rulemaking within 30 days of the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria that have not been met. The Regulatory Review Act specifies detailed procedures for review of these issues by the Department, the General Assembly and the Governor prior to final-form publication of the regulations.

*H. Public Comments*

*Written Comments*—Interested persons are invited to submit comments, suggestions or objections regarding the proposed rulemaking to the Environmental Quality Board, P. O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 15th Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. The Board must receive comments, suggestions or objections by April 7, 2003. Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received by April 7, 2003. The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final-form rulemaking will be considered.

*Electronic Comments*—Comments may be submitted electronically to the Board at RegComments@state.pa.us and must also be received by the Board by March 31, 2003. A subject heading of the proposal and a return name and address must be included in each transmission. If the sender does not receive an acknowledgement of electronic comments within 2 working days, the comments should be retransmitted to ensure receipt.

KATHLEEN A. MCGINTY,  
*Acting Chairperson*

**Fiscal Note:** 7-382. (1) General Fund;

		<i>Environmental Protection Operations</i>	<i>Environmental Program Management</i>
(2) Implementing	Year 2002-03 is	\$ 4,592	\$ 1,008
(3) 1st Succeeding	Year 2003-04 is	\$ 4,592	\$ 1,008
	2nd Succeeding	Year 2004-05 is	\$ 4,592
	3rd Succeeding	Year 2005-06 is	\$ 4,592
	4th Succeeding	Year 2006-07 is	\$ 4,592
	5th Succeeding	Year 2007-08 is	\$ 4,592

	<i>Environmental Protection Operations</i>	<i>Environmental Program Management</i>
(4) 2001-02 Program—	\$75,074,000	\$43,354,000
2000-01 Program—	\$76,018,000	\$41,471,000
1999-00 Program—	\$71,402,000	\$40,200,000
(8) recommends adoption.		

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE II. WATER RESOURCES

CHAPTER 109. SAFE DRINKING WATER

Subchapter A. GENERAL PROVISIONS

§ 109.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

\* \* \* \* \*

**Liquid from dewatering processes**—A stream containing liquids generated from a unit used to concentrate solids for disposal.

\* \* \* \* \*

**Recycle**—The act of returning recycle streams to a conventional or direct filtration plant's treatment process.

**Recycle flows**—

(i) Any water, solid or semisolid generated by a conventional or direct filtration plant's treatment process and residual treatment processes that is returned to the plant's treatment process.

(ii) The term is also referred to as recycle streams.

\* \* \* \* \*

**Spent filter backwash water**—A stream containing particles dislodged from filter media when the filter is backwashed to clean the filter.

\* \* \* \* \*

**Thickener supernatant**—A stream containing the decant from a clarifier, sedimentation basin, or other unit used to treat water, solids or semisolids from the primary treatment process.

\* \* \* \* \*

Subchapter B. MCLs, MRDLs OR TREATMENT TECHNIQUE REQUIREMENTS

§ 109.202. State MCLs, MRDLs and treatment technique requirements.

\* \* \* \* \*

(h) **Recycling of waste stream.**

(1) If no capital improvements are required, a public water supply system that uses a surface water source or GUDI and provides conventional filtration or direct filtration treatment and recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall return

these flows through the processes of the system's existing conventional or direct filtration system as defined in § 109. 1 (relating to definitions) or at an alternate location approved by the Department by June 8, 2004.

(2) If capital improvements are required to modify the recycle location to meet the requirement, in paragraph the capital improvements shall be completed by June 8, 2006.

(3) Capital improvement means a nonrecurring, significant modification or expenditure for nonroutine, long-term physical improvements to any part of a public water system to include, but not be limited to, construction activities, renovation activities, demolition activities, source development, treatment process modifications, storage modifications, distribution system modifications, waste-processing modifications and the associated design costs.

Subchapter G. SYSTEM MANAGEMENT RESPONSIBILITIES

§ 109.701. Reporting and recordkeeping.

\* \* \* \* \*

(h) **Reporting and record maintenance requirements for systems recycling their waste streams.**

(1) Public water systems using surface water or GUDI sources and providing conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall notify the Department in writing by December 8, 2003. This notification shall include the following information:

(i) A plant schematic showing the origin of all flows that are recycled (including, but not limited to, spent filter backwash water, thickener supernatant and liquids from dewatering processes), the hydraulic conveyance used to transport them and the location where they are reintroduced back into the treatment plant.

(ii) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experience in the previous year (gpm), design flow for the treatment plant (gpm) and Department-approved operating capacity for the plant.

(2) **Record maintenance.** Beginning June 8, 2004, public water systems using surface water or GUDI sources and providing conventional filtration or direct filtration and recycle spent filter backwash water, thickener supernatant or liquids from dewatering processes shall collect and retain on file recycle flow information specified in this paragraph. This information is for the previous year of recycling and shall be available to the Department for review and evaluation at the Department's request:

(i) A copy of the recycle notification and information submitted to the Department under subsection (h).

(ii) A list of all recycle flows and the frequency with which they are returned.

(iii) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(iv) **Typical filter run length and a written summary of how filter run length is determined.**

(v) **The type of treatment provided for the recycle flow.**

(vi) **Data on the physical dimensions of the equalization or treatment units, or both, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.**

[Pa.B. Doc. No. 03-395. Filed for public inspection March 7, 2003, 9:00 a.m.]

## [25 PA. CODE CH. 109]

### Safe Drinking Water; Radionuclides Rule

The Environmental Quality Board (Board) proposes to amend Chapter 109 (relating to safe drinking water). The proposed amendments include requirements for uranium, which is not currently regulated, and revisions to the monitoring requirements for combined radium-226 and radium-228, gross alpha particle radioactivity, and beta particle and photon radioactivity. In addition, the amendments make the radionuclides regulations more consistent with other regulations, such as revisions to monitoring frequencies and the point of compliance.

This proposal was adopted by the Board at its meeting of December 17, 2002.

#### A. *Effective Date*

These proposed amendments will go into effect upon publication in the *Pennsylvania Bulletin* as final-form rulemaking.

#### B. *Contact Persons*

For further information, contact Jeffrey A. Gordon, Chief, Division of Drinking Water Management, P. O. Box 8467, Rachel Carson State Office Building, Harrisburg, PA 17105-8467, (717) 772-4018; or Marylou Barton, Assistant Counsel, Bureau of Regulatory Counsel, P. O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Information regarding submitting comments on this proposal appears in Section I of this preamble. Persons with a disability may use the AT&T Relay Service by calling (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This proposal is available electronically through the Department of Environmental Protection's (Department) website (<http://www.dep.state.pa.us>).

#### C. *Statutory Authority*

The proposed rulemaking is being made under the authority of section 4 of the Pennsylvania Safe Drinking Water Act (35 P. S. § 721.4), which grants the Board the authority to adopt rules and regulations governing the provision of drinking water to the public and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-7 and 510-20).

#### D. *Background and Purpose*

In 1976, National Interim Primary Drinking Water Regulations were promulgated for radium-226 and radium-228, gross alpha particle radioactivity and beta particle and photon radioactivity. The 1986 reauthorization of the Safe Drinking Water Act (SDWA) required the Environmental Protection Agency (EPA) to promulgate

maximum contaminant level (MCL) goals and National Primary Drinking Water Regulations for the previously listed radionuclides, radon and uranium.

In 1991, the EPA proposed new radionuclide regulations. These proposed regulations established MCLGs for all of the radionuclides, established MCLs for uranium (20 pCi/l or 30 µg/l) and radon (300 pCi/l) and revised the MCLs for radium-226 (20 pCi/l), radium-228 (20 pCi/l) and beta and photon radioactivity (4 mrem-effective dose equivalent). The proposal also established a standard monitoring framework and changed the monitoring requirements for beta and photon radioactivity from large systems using surface water and serving over 100,000 people to only those systems that are vulnerable to contamination by radionuclides. The proposed regulation proved controversial, especially the radon component, and the regulation was not finalized at the time.

On April 21, 2000, the EPA published a Notice of Data Availability (NODA) on radionuclides. The NODA included updated information on the health effects of the radionuclides. Based on the updated information, the EPA reestablished the combined radium MCL at 5 pCi/l, the beta and photon radioactivity at 4 mrem/year and requested comments on establishing a uranium MCL of 20, 40 or 80 µg/l or pCi/l. The EPA excluded radon from the proposed radionuclides rule as required by the 1996 SDWA amendments.

The EPA finalized the radionuclides rule on December 7, 2000. The final Federal regulation applies to all community water systems, retains the MCLs for combined radium-226 and radium-228, gross alpha particle activity, beta and photon radioactivity, and establishes the uranium MCL at 30 µg/l, based on kidney toxicity. The final rule also retains the standard monitoring framework proposed in 1991, as well as beta and photon radioactivity monitoring only for systems that are designated as vulnerable to radionuclide contamination or which utilize waters contaminated by effluents from nuclear facilities. The deadline for adoption of this regulation is 2 years after Federal promulgation, or December 7, 2002. An extension has been requested from the EPA to allow the Commonwealth to maintain primacy for the Safe Drinking Water Program.

To ensure that every customer's water meets the MCLs for radionuclides, the Department's Radionuclides Rule requires monitoring at each entry point to a community water system's distribution system. This requirement is consistent with the monitoring requirements for other, comparable drinking water contaminants. By contrast, the 1976 Rule protected only "the average customer" by requiring the collection of monitoring samples from a "free flowing tap."

The Water Resources Advisory Committee (WRAC) reviewed the Department's proposed rulemaking at its meetings on May 8, 2002, and July 10, 2002. The WRAC supported the Department's watershed approach, rather than the 15-mile radius approach recommended by the EPA. They also advised that clarification for several terms was needed. These terms included: "nuclear facility," "vulnerable," "contaminated" and "vicinity." The WRAC further recommended that the emphasis for this program should be on pathways of exposure. The WRAC suggested that the Department consider discussing these issues in the preamble rather than including them in the regulation, because there are no comparable definitions in the Federal rule.

The Department has considered the recommendations of the WRAC. It appreciates the WRAC's concurrence

with the watershed approach to vulnerability, agrees that the terms are vague and that clarification should be provided. The terms are clarified in Section E of this preamble. These clarifications were discussed with the WRAC at its July 10, 2002, meeting, and there was general agreement with the meanings of the terms. There was a concern that some leaking landfills could be sources of radionuclides. However, since the vast majority of leaking landfills are not sources of radionuclides, they are not considered nuclear facilities. If any leaking landfill is discovered to be a source of radionuclides, it will be considered on a case-by-case basis. The issue of pathways was discussed in the context of this drinking water regulation. In the case of a release from a nuclear facility, the release will be confined to the watershed if the release is to the ground surface or to surface water. Therefore, the determination of vulnerability as proposed is still valid. The only possibility of the release migrating from the watershed is the case of a release to the atmosphere. To cover this possibility, the Department has compiled a list of community water systems within a 15-mile radius. This list may be utilized to notify water systems in the event of an atmospheric release of radionuclides.

The members of the Technical Assistance Center (TAC) for Small Water Systems were sent the regulation on May 8, 2002. The TAC discussed the regulation at its August 13, 2002, meeting, and chose to submit no written comments.

#### E. Summary of Regulatory Requirements

The proposed amendments reflect, and are not more stringent than, new Federal requirements, unless otherwise specified. The amendments are being proposed because there is no language currently in Chapter 109 that addresses the new Federal requirements.

The Safe Drinking Water Program plans to involve and inform the public of the proposed amendments through publication in the *Pennsylvania Bulletin*. The Department will also post notice and information about the amendments on the Department's website at [www.dep.state.pa.us](http://www.dep.state.pa.us). The Safe Drinking Water Program staff is also prepared to attend public meetings if invited to do so.

The Federal Radionuclides Rule was promulgated on December 7, 2000. A new MCL for uranium has been established at 30 µg/l to protect drinking water customers from uranium levels that may cause toxic effects to the kidney and reduce cancer risk. This proposed rulemaking also establishes new monitoring requirements for uranium and revised monitoring requirements for the currently regulated radionuclides.

Changes include an analysis for both radium-226 and radium-228 and monitoring at the entry points to the distribution system rather than at a "free flowing tap" within the distribution system.

This proposed rulemaking also allows reduced monitoring frequencies in systems where the concentrations of radionuclides are low, resulting in decreased costs for compliance with the regulation.

This proposed rulemaking drops the requirement for large systems using surface water sources to monitor for beta and photon radioactivity and only requires beta and photon analyses for systems that are designated as vulnerable or using waters contaminated by effluents from nuclear facilities. The EPA recommends that states use all available resources to determine a system's vulnerability to beta particle and photon emitters including

the following: quality and completeness of any historical beta particle and photon emitter monitoring results and the proximity of the results to the MCL; the Nuclear Regulatory Commission's (NRC) list of licenses and location in the state and surrounding states; geology of the aquifer and/or hydrology of the watershed; and the location and proximity of the drinking water facility to nuclear facilities. The EPA recommends the use of a 15-mile radius from nuclear facilities as the designation for vulnerability. The Commonwealth feels this criterion to be excessive. Therefore, the Department is proposing to utilize a watershed-based approach to determining vulnerability to contamination from nuclear facilities. Systems lying in the same watershed as a nuclear facility will be designated as vulnerable to contamination. Additional systems may be designated as vulnerable if the watershed contains hazardous geologic conditions, including carbonate geology, highly fractured bedrock or gravel deposits. Vulnerable systems will be notified by the Department.

The EPA states that states should use any historical beta particle and photon emitter monitoring results to determine whether a system is utilizing waters contaminated by effluents from nuclear facilities. Systems with wide variations in the analytical results or analytical results close to the MCL should be considered a system contaminated by a radioactive source. Systems designated as utilizing waters contaminated by effluents from nuclear facilities will be notified by the Department.

Major components of the amendments include the following:

*§ 109.301(14) (relating to general monitoring requirements).*

This paragraph requires community water systems to monitor for compliance with the MCLs for radionuclides established by the EPA.

*§ 109.301(14)(i)*

This subparagraph establishes monitoring requirements for gross alpha particle activity, radium-226, radium-228 and uranium.

*§ 109.301(14)(i)(A)*

This clause establishes a time schedule for initial monitoring for community water systems, based on the number of customers served. The Department has established a phased-in monitoring schedule to allow the smaller systems more time to comply, while simultaneously avoiding the possibility of overloading the laboratories.

*§ 109.301(14)(i)(A)(I)—(IV)*

These subclauses specify monitoring periods for initial sampling, depending on the size of the community water system.

*§ 109.301(14)(i)(A)(V)—(VI)*

These subclauses specify initial sampling requirements for new entry points associated with new sources.

*§ 109.301(14)(i)(A)(VII)*

This subclause requires additional sampling for entry points where radionuclides have been detected in concentrations greater than the MCL.

*§ 109.301(14)(i)(B)*

This clause establishes a schedule for repeat monitoring, based on the results of the initial monitoring. The monitoring frequencies used in this clause are based on

the EPA's standardized monitoring schedule. The basis of the schedule is a 3-year period.

*§ 109.301(14)(i)(B)(I)—(IV)*

These subclauses provide for reduced or increased monitoring frequencies, depending on the results of the most recent sample.

*§ 109.301(14)(i)(B)(V)*

This subclause prohibits reduced monitoring for systems where treatment has been installed to comply with a radionuclide MCL. For these systems, quarterly performance monitoring and annual compliance monitoring are required. Performance monitoring samples be taken immediately following treatment for the radionuclide or at another location approved by the Department. The EPA would allow reduced monitoring where there is treatment for the radionuclide.

While this provision is more stringent than the Federal requirements, it is needed to protect the public. In addition, the prohibition of reduced monitoring for systems where treatment is required for compliance with the MCL is consistent with the regulations for synthetic organic chemicals, inorganic chemicals and volatile organic chemicals.

*§ 109.301(14)(i)(C)*

This clause allows the gross alpha particle activity measurement to substitute for the sampling for radium-226, if the alpha activity is less than 5 pCi/l, and for the sampling for uranium, if the alpha activity is less than 15 pCi/l, provided that the gross alpha measurement has a confidence level of 95%. To establish the required 95% confidence level, the measurement error must be added to the analytical result, and the combined result must be less than the level indicated (5 pCi/l for radium-226 and 15 pCi/l for uranium).

*§ 109.301(14)(i)(D)(I)—(III)*

These subclauses allow for the grandfathering of existing sample results instead of the initial monitoring requirements in certain specified situations.

*§ 109.301(14)(ii)*

This subparagraph establishes additional monitoring requirements for water systems designated vulnerable or contaminated by effluent from nuclear facilities. Nuclear facilities are defined as nuclear power and nonpower plants, United States Department of Energy facilities, military bases utilizing nuclear materials and radiation-contaminated sites listed on the EPA's National Priority List or the NRC's Site Decommissioning Management Plan.

*§ 109.301(14)(ii)(A)*

This clause requires sampling for beta emitters, tritium and strontium-90 for systems designated as vulnerable.

For beta particle and photon activity, quarterly samples are required. The system may analyze four separate quarterly samples and average the results or may composite the samples and do one analysis. The EPA recommends the former procedure.

One annual sample is required for tritium and strontium-90. No multiple samples or compositing of samples is required.

*§ 109.301(14)(ii)(A)(I)*

This subclause allows for reduced monitoring for systems that have a running annual average of gross beta particle activity less than or equal to a screening level of 50 pCi/l.

*§ 109.301(14)(ii)(A)(II)*

This subclause allows systems in the vicinity of a nuclear facility to utilize the environmental surveillance data collected by the facility instead of monitoring at the system's entry points, where the Department determines that data is applicable to the system.

*§ 109.301(14)(ii)(B)*

This clause identifies the required sampling for systems designated as utilizing waters contaminated by effluents from nuclear facilities.

*§ 109.301(14)(ii)(B)(I)—(V)*

These subclauses identify the specific monitoring requirements for gross beta particle activity, iodine-131, strontium-90 and tritium.

*§ 109.301(14)(ii)(C)*

This clause prohibits water systems required to monitor for beta particle and photon radioactivity from applying for a waiver from the established monitoring frequencies.

*§ 109.301(14)(ii)(D)*

This clause allows the same or equivalent sample used for the beta particle activity to be analyzed for potassium-40 and provides a method for determining the activity of potassium-40 based on its concentration.

*§ 109.301(14)(ii)(E)*

This clause requires the identification of radioactive compounds and the calculation of the dosages from the compounds if the gross beta particle activity minus the potassium-40 activity exceeds the established screening levels. The dosages from all constituents shall be summed to determine compliance with the MCL.

*§ 109.301(14)(ii)(F)*

This clause requires monthly monitoring for systems that exceed the MCL for gross beta particle activity. It also provides for the return to quarterly monitoring if the MCL has been met by a rolling average of 3 monthly samples.

*§ 109.301(14)(iii)*

This subparagraph establishes general monitoring and compliance requirements.

*§ 109.301(14)(iii)(A)*

This clause allows the Department to require more frequent monitoring than specified, or may require confirmation samples, if it believes these samples are needed.

*§ 109.301(14)(iii)(B)*

This clause provides that each system shall monitor at the time designated by the Department during each compliance period.

*§ 109.301(14)(iii)(C)*

This clause provides a mechanism whereby compliance with the MCLs is determined for each entry point. If one entry point is in violation of the MCL, the entire system is in violation of the MCL.

*§ 109.301(14)(iii)(D)*

This clause allows the Department to delete results of obvious sampling or analytical errors.

*§ 109.303(h)*

This subsection provides the requirements for the compositing of quarterly sampling for radium-226, radium-228 and uranium.



*§ 109.303(i)*

This subsection provides for the compositing of samples for beta particle and photon radioactivity.

*§ 109.303(j)*

This subsection provides acceptable locations for the performance sampling required under § 109.301(14)(i)(B)(V). Performance sampling has been prohibited at entry points, since the EPA has indicated that any sample taken at a compliance point (that is entry point) must be used as a compliance sample.

*F. Benefits, Costs and Compliance**Benefits*

The purpose of this radionuclide proposed rulemaking is to minimize the public risk of consuming drinking water containing unsafe levels of naturally occurring and manmade radionuclides.

The current regulations do not provide protection from kidney damage due to the presence of high levels of uranium in drinking water. The new uranium MCL will reduce the exposure of 620,000 persons to this contaminant, will protect CWS customers from exposure to uranium at levels that may cause kidney damage and will reduce the risk of cancer caused by exposure to uranium. An estimated 0.8 cancer cases are expected to be avoided annually due to the MCL, resulting in estimated benefits of \$3 million per year. (The monetary benefits from reduced kidney damage cannot be quantified because of limitation in existing health effects models at levels near the MCL.) Reducing the presence of uranium in drinking water will also remove other contaminants, providing additional benefits to CWS customers.

The current regulations do not require the analysis of radium-228 unless the gross alpha particle activity is greater than 5 pCi/l. However, since radium-228 is a beta emitter, linking the sampling to results of alpha particle activity is not protective of health. The new rule sets separate monitoring requirements for radium-228, which are expected to reduce the exposure of 420,000 persons and result in the avoidance of 0.4 cancer cases per year, with estimated monetized health effects benefits of \$2 million annually. Water mitigation for radium also tends to reduce iron and manganese levels and hardness, which also has significant associated benefits.

In addition to providing increased public protection, the proposed rulemaking allows for reduced monitoring frequencies in systems where the concentration of radionuclides is low. The reduced monitoring will result in lower costs for compliance with the proposed rulemaking.

*Compliance Costs*

The compliance cost depends on the number of entry points to the distribution system for a CWS and whether the MCL is exceeded. CWSs have been monitoring for gross alpha and radium since the late 1970s. Since 1986, Commonwealth CWSs have also been monitoring for both radium-226 and radium-228 when the gross alpha exceeds 5 pCi/L. Commonwealth CWSs that have exceeded the combined radium MCL have either provided treatment or abandoned the source. The Department will also use the option that allows the grandfathering of previous compliance monitoring results to reduce the initial compliance monitoring for gross alpha and combined radium, as well as uranium, if applicable. There should be minimal additional monitoring costs associated with the

combined radium MCL, except possibly for those CWSs which have more than a single entry point to the distribution system.

The only new MCL is for uranium. The EPA has estimated that the cost for the analysis of total uranium is approximately \$48 per sample (by laser phosphorimetry, 1999 dollars). The cost to individual CWSs will depend on the number of entry points. The larger systems will have more entry points than a smaller system. The cost estimate for uranium testing has been estimated to be \$37—\$512 per year per system.

EPA has not done a cost analysis for the uranium MCL of 30 µg/l. They have, however, done cost analyses for MCLs of 20 µg/l and 40 µg/l. Based on these, it is estimated that Nationwide, between 430 and 970 CWSs will require treatment to meet the uranium MCL with a total estimated annual cost of \$68 million to \$157 million.

*Compliance Assistance Plan*

The Safe Drinking Water Program utilizes the Commonwealth's Pennsylvania Infrastructure Investment Authority Program to offer financial assistance to eligible public water systems. This assistance is in the form of a low-interest loan, with some augmenting grant funds for hardship cases. Eligibility is based upon factors such as public health impact, compliance necessity and project/operational affordability.

The Safe Drinking Water Program has established a network of regional and central office training staff that is responsive to identifiable training needs. The target audience in need of training may be either the Safe Drinking Water Program staff or the regulated community. Training is anticipated for water systems in the fall of 2003.

In addition to this network of training staff, the Bureau of Water Supply and Wastewater Management has a division dedicated to providing both training and outreach support services to public water system operators. The Department's website also contains the Drinking Water and Wastewater Operator Information Center Internet site, which provides a bulletin board of timely, useful information for treatment plant operators.

*Paperwork Requirements*

Community water systems are already required to monitor for radionuclides. Systems may use existing forms for compliance with this proposed rulemaking. It is anticipated that the majority of systems will be able to monitor on 6-year and 9-year frequencies, rather than the 4-year frequency that is required under the existing regulations. This reduced monitoring frequency will reduce the paperwork and recordkeeping requirements.

*G. Sunset Review*

These regulations will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which they were intended.

*H. Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on February 21, 2003, the Department

submitted a copy of the proposed rulemaking to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the Senate and House Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, if IRRC has objections to any portion of the proposed amendments, it will notify the Department within 30 days of the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria that have not been met. The Regulatory Review Act specifies detailed procedures for review of these issues by the Department, the General Assembly and the Governor prior to final publication of the regulations.

*I. Public Comments*

*Written Comments*—Interested persons are invited to submit comments, suggestions or objections regarding the proposed rulemaking to the Environmental Quality Board, P. O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 15th Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions or objections must be received by the Board by April 7, 2003. Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received by April 7, 2003. The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final regulation will be considered.

*Electronic Comments*—Comments may be submitted electronically to the Board at regcomments@state.pa.us and must also be received by the Board by March 31, 2003. A subject heading of the proposal and a return name and address must be included in each transmission.

If an acknowledgement of electronic comments is not received by the sender within 2 working days, the comments should be retransmitted to ensure receipt.

KATHLEEN A. MCGINTY,  
*Acting Chairperson*

**Fiscal Note:** 7-381. (1) General Fund;

		<i>Environmental Protection Operations</i>	<i>Environmental Program Management</i>
(2) Implementing	Year 2002-03 is	\$ 0	\$ 0
(3) 1st Succeeding	Year 2003-04 is	\$ 8,364	\$ 1,836
2nd Succeeding	Year 2004-05 is	\$ 8,364	\$ 1,836
3rd Succeeding	Year 2005-06 is	\$ 8,364	\$ 1,836
4th Succeeding	Year 2006-07 is	\$ 1,968	\$ 432
5th Succeeding	Year 2007-08 is	\$ 1,968	\$ 432
		<i>Environmental Protection Operations</i>	<i>Environmental Program Management</i>
(4) 2001-02 Program—	\$75,074,000	\$43,354,000	
2000-01 Program—	\$76,018,000	\$41,471,000	
1999-00 Program—	\$71,402,000	\$40,200,000	
(8) recommends adoption.			

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE II. WATER RESOURCES

CHAPTER 109. SAFE DRINKING WATER

Subchapter C. MONITORING REQUIREMENTS

§ 109.301. General monitoring requirements.

The monitoring requirements established by the EPA under the National Primary Drinking Water Regulations, 40 CFR Part 141 (relating to national primary drinking water regulations), as of December 8, 1984, are incorporated by reference. Public water suppliers shall monitor for compliance with MCLs and MRDLs in accordance with the requirements established in the National Primary Drinking Water Regulations, except as otherwise established by this chapter unless increased monitoring is required by the Department under § 109.302 (relating to special monitoring requirements). Alternative monitoring requirements may be established by the Department and may be implemented in lieu of monitoring requirements for a particular National Primary Drinking Water Regulation if the alternative monitoring requirements are in conformance with the Federal act and regulations. The monitoring requirements shall be applied as follows:

\* \* \* \* \*

**(14) Monitoring requirements for radionuclides.** Community water systems shall monitor for compliance with the MCLs for radionuclides established by the EPA under 40 CFR 141.66(b), (c), (d) and (e) (relating to MCLs for radionuclides). The monitoring shall be conducted according to the requirements established by EPA under 40 CFR 141.25 and 141.26 (relating to monitoring frequency; and compliance requirements) which are incorporated by reference, except as modified by this chapter. Initial or first-year monitoring mentioned in this paragraph refers to monitoring conducted on or after January 1, 2004.

**(i) Monitoring requirements for gross alpha particle activity, radium-226, radium-228 and uranium.**

**(A) Initial monitoring schedule.** The initial monitoring shall consist of four consecutive quarterly samples for each radionuclide at each entry point in accordance with the following monitoring schedule except for systems that are granted reduced initial monitoring in accordance with subclause (VI).

**(I) Systems serving more than 10,000 persons shall begin monitoring during the quarter beginning January 1, 2004.**

**(II) Systems serving more than 3,301 persons to 10,000 persons shall begin monitoring during the quarter beginning January 1, 2005.**

**(III) Systems serving 500 to 3,300 persons shall begin monitoring during the quarter beginning January 1, 2006.**

**(IV) Systems serving fewer than 500 persons shall begin monitoring during the quarter beginning January 1, 2007.**

(V) Systems that add new entry points associated with new sources shall begin initial quarterly monitoring during the first quarter the entry point begins serving the public. Quarterly monitoring shall continue until reduced monitoring is granted in accordance with clause (B) or subclause (VI).

(VI) If the first two quarterly samples for each radionuclide at each entry point have results below the detection limit, as defined in 40 CFR 141.25(c)(1), the final two quarterly samples for that radionuclide at that entry point are waived.

(VII) For entry points at which the monitoring result for an entry point is above the MCL, the system shall collect and analyze quarterly samples at that entry point until the system has results from 4 consecutive quarters at that entry point that are at or below the MCL.

(B) *Repeat monitoring.* Beginning on January 1, 2008, systems shall take one sample for each radionuclide at each entry point in each 3-year compliance period, unless the system qualifies for reduced monitoring as follows:

(I) For entry points where the average of the initial monitoring results for each radionuclide is at or above the detection limit as defined in 40 CFR 141.25(c)(1), but at or below one-half of the MCL for that radionuclide, the repeat monitoring is reduced to one sample for that radionuclide at that entry point every 6 years.

(II) For entry points where the average of the initial monitoring results for each radionuclide is below the detection limit as defined in 40 CFR 141.25(c)(1), the repeat monitoring is reduced to one sample for that radionuclide at each entry point every 9 years.

(III) If a system has a monitoring result that exceeds the MCL while on reduced monitoring, the system shall collect and analyze quarterly samples for that radionuclide at that entry point beginning the next calendar quarter following the exceedance until the system has results from 4 consecutive quarters for that radionuclide at that entry point that are below the MCL.

(IV) Systems shall use the results of the samples collected during the reduced monitoring period to determine the monitoring frequency for subsequent monitoring periods.

(V) Reduced monitoring does not apply to those systems where treatment has been installed for radionuclide removal to comply with an MCL listed under 40 CFR 141.66. Compliance monitoring for radionuclides where treatment has been installed to comply with an MCL shall be conducted at least annually, and performance monitoring for the specific radionuclides for which treatment is provided shall be conducted quarterly.

(C) *Gross alpha substitution.* A gross alpha particle activity measurement may be substituted for the required radium-226 measurement provided that the measured gross alpha particle activity does not exceed 5 pCi/l. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/l. The gross alpha measurement shall have a confidence interval of 95% ( $1.65\sigma$ , where  $\sigma$  is the

standard deviation of the net counting rate of the sample) for radium-226 and uranium. If the gross alpha particle activity result is less than detection as defined in 40 CFR 141.25(c)(1), one-half of the detection limit will be used to determine compliance and the future monitoring frequency.

(D) *Grandfathering.* The Department will allow historical monitoring data collected at an entry point to satisfy the initial monitoring requirements required under clause (A) for that entry point in the following situations:

(I) A system having only one entry point may use the monitoring data from the compliance monitoring period between June 2000 and December 8, 2003.

(II) A system with multiple entry points and having appropriate historical monitoring data for each entry point may use the monitoring data from the compliance monitoring period between June 2000 and December 8, 2003.

(III) A system with multiple entry points and having appropriate historical data for a representative point in the distribution system may use the monitoring data from the compliance monitoring period between June 2000 and December 8, 2003, provided that the Department finds that the historical data satisfactorily demonstrate that each entry point is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of radionuclide levels between entry points. The system shall supply sufficient information to allow the Department to make a written finding indicating how the data conform to these requirements.

(ii) *Monitoring requirements for beta-particle and photon radioactivity.*

(A) Systems designated by the Department as vulnerable to beta-particle or photon radioactivity or both shall sample for beta particle and photon radioactivity. Systems shall collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point, beginning within 1 quarter after being notified by the Department.

(I) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at an entry point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the frequency of monitoring at that entry point shall be repeated every 3 years. Systems shall collect all samples required in clause (A) during the reduced monitoring period.

(II) For systems in the vicinity of a nuclear facility, the system may utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry points, when the Department determines that the data is applicable to the system. If there is a release from a nuclear facility, systems that are using surveillance data shall begin monitoring at the community water system's entry points in accordance with clause (A).

(B) Systems designated by the Department as utilizing waters contaminated by effluents from nuclear facilities shall sample for beta particle and photon radioactivity. Systems shall monitor quar-

terly for beta emitters and iodine-131, and annually for tritium and strontium-90 at each entry point, beginning within 1 quarter after being notified by the Department. Monitoring shall be conducted as follows:

(I) Monitoring for gross beta particle activity shall be based on the average of an analysis of 3 monthly samples.

(II) For iodine-131, a composite of 5 consecutive daily samples shall be analyzed once each quarter. More frequent monitoring, as determined by the Department, shall be conducted when iodine-131 is identified in the finished water.

(III) Monitoring for strontium-90 and tritium shall be conducted by means of the analysis of four quarterly samples.

(IV) If the gross beta particle activity beta minus the naturally occurring potassium-40 beta particle activity at an entry point has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), the frequency of monitoring at that entry point shall be reduced to four consecutive quarterly samples taken once every 3 years. Systems shall collect all samples required in clause (B) during the reduced monitoring period.

(V) For systems in the vicinity of a nuclear facility, the system may utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry points, when the Department determines that the data is applicable to the system. If there is a release from a nuclear facility, systems that are using surveillance data shall begin monitoring at the system's entry points in accordance with clause (B).

(C) Systems designated by the Department to monitor for beta particle and photon radioactivity may not apply to the State for a waiver from the monitoring frequencies specified in clause (A) or (B).

(D) Systems may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. The potassium-40 beta particle activity shall be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(E) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the screening level, an analysis of the sample shall be performed to identify the major radioactive constituents present in the sample. The results of the individual constituent analysis shall be reported in pCi/l, and the appropriate doses shall be calculated and summed to determine compliance with the MCL, using the formula in 40 CFR 141.66(d)(2). Doses shall also be calculated and combined for measured levels of tritium and strontium to determine compliance.

(F) Systems shall monitor monthly at the entry points that exceed the MCL beginning the month after the exceedance occurs. Systems shall continue monthly monitoring until the system has established, by a rolling average of three monthly samples, that the MCL is being met. Systems that establish that the MCL is being met shall return to

quarterly monitoring until they meet the requirements in subclause (A)(I) or (B)(IV).

(iii) *General monitoring and compliance requirements.*

(A) The Department may require more frequent monitoring than specified in subparagraphs (i) and (ii), or may require confirmation samples. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

(B) Each system shall monitor at the time designated by the Department during each compliance period.

(C) Compliance with the MCLs will be determined based on the analytical results obtained at each entry point. If one entry point is in violation of an MCL, the system is in violation of the MCL.

(I) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each entry point. If the running annual average at an entry point is greater than the MCL, the system is in violation of the MCL. If a sample result will cause the running annual average to exceed the MCL at an entry point, the system is in violation of the MCL immediately.

(II) Systems shall include all samples taken and analyzed under this section in determining compliance, even if that number is greater than the minimum required.

(III) If a system does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.

(IV) If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226 or uranium, or both. If the gross alpha particle activity result is less than detection, one-half of the detection limit will be used to calculate the annual average.

(D) The Department may delete results of obvious sampling or analytic errors.

§ 109.303. Sampling requirements.

\* \* \* \* \*

(h) Samples taken to determine compliance with combined radium-226 and radium-228, gross alpha particle activity, or uranium under 40 CFR 141.66(b), (c) and (e) (relating to MCLs for radionuclides) may be composited from a single entry point if the analysis is done within a year of the date of the collection of the first sample. The Department will treat analytical results from the composited sample as the average analytical result to determine compliance with the MCLs and the future monitoring frequency.

(1) If the analytical result from the composited sample is greater than one-half the MCL, the Department may direct the system to take additional quarterly samples before allowing the system to sample under a reduced monitoring schedule.

(2) Samples obtained from an entry point that contains water treated to specifically meet an MCL

for a radionuclide contaminant listed under 40 CFR 141.66(b), (c) or (e) may not be composited.

(i) Samples taken to determine compliance with beta particle and photon radioactivity under 40 CFR 141.66(d) may be composited as follows:

(1) Monitoring for gross beta-particle activity may be based on the analysis of a composite of three monthly samples.

(2) Monitoring for strontium-90 and tritium may be based on the analysis of a composite of four consecutive quarterly samples.

(j) Performance samples required under § 109.301 (14)(i)(B)(V) (relating to general monitoring requirements) shall be taken immediately following treatment for the radionuclide, or at another location approved by the Department. Systems may not take performance samples at an entry point.

[Pa.B. Doc. No. 03-396. Filed for public inspection March 7, 2003, 9:00 a.m.]

## MUNICIPAL POLICE OFFICERS' EDUCATION AND TRAINING COMMISSION

[37 PA. CODE CH. 203]

### Administration of the Training Program

The Municipal Police Officers' Education and Training Commission (Commission) proposes to amend Chapter 203 (relating to administration of the program) to read as set forth in Annex A.

The Commission proposes to amend § 203.11(a)(5) and (8) (relating to qualifications) to include a ninth grade reading requirement and a physical fitness evaluation.

The Commission proposes to amend § 203.12(4) (relating to waiver of training) to limit a waiver candidate to three attempts at passing the Commission's certification examination. After the third failure, the candidate shall retake and pass the entire basic training course before being eligible for certification. This proposed amendment will ensure that a waiver candidate has current training by limiting the amount of times that the certification examination can be taken.

The Commission proposes to amend § 203.33(a)(14) (relating to minimum school standards and requirements) to allow certified schools to use indoor ranges and to insure that the ranges be able to handle the required training.

The Commission also proposes to amend § 203.54 (relating to Commission cheating policy) to define and clarify the acts that will constitute cheating and to make clear that anyone found guilty of cheating will be ineligible for certification.

The purpose of the proposed rulemaking is to clarify and correct various aspects of the existing regulations.

### *Statutory Authority*

The rulemaking is proposed under 53 Pa.C.S. § 2164 (1), (8) and (14) (relating to duties and powers of commission).

### *Effect*

The proposed rulemaking will primarily affect recruits. Recruits will have to pass a physical fitness assessment and pass a ninth grade reading test before they can become eligible for training.

The proposed rulemaking will impact those persons seeking waivers of training, since they will have only three opportunities to successfully pass the certification examination. After the third failure, the waiver candidate shall retake and pass the basic training course to become eligible for certification.

Both recruits and veteran police officers will be affected by the new cheating policy. The impact of the new cheating policy is to put individuals and schools on notice as to what will be considered cheating on an official Commission sponsored examination. This proposed rulemaking will allow the schools and the students to more readily detect and curb cheating and it establishes a more uniform policy.

Allowing certified schools to use indoor ranges will offer more flexibility to the schools. However, the indoor and outdoor ranges must be able to safely accommodate all of the required training.

### *Effective Date/Sunset Date*

The proposed rulemaking will be effective immediately upon final-form adoption. The regulations are continually monitored and updated as needed. Therefore, no sunset date has been set.

### *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on February 24, 2003, the Commission submitted a copy of this proposed rulemaking to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House Judiciary Committee and the Senate Law and Justice Committee. In addition to submitting the proposed rulemaking, the Commission has provided IRRC and the Committees with a copy of a detailed Regulatory Analysis Form prepared by the Commission. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, if IRRC has objections to any portion of the proposed rulemaking, it will notify the Commission within 30 days of the close of the public comment period. The notification shall specify the regulatory review criteria that have not been met by the portion of the proposed rulemaking to which an objection is made. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the rulemaking, by the State Police, the General Assembly and the Governor of objections raised.

### *Contact Person/Public Comment*

Interested persons wishing to comment are invited to submit written comments within 30 days of the publication of this proposed rulemaking in the *Pennsylvania Bulletin*. Written comments must include the name, address and telephone number of the interested party and a concise statement with sufficient detail on the subject. Written statements may be directed to Major Richard C. Mooney, Executive Director, Municipal Police Officers' Education and Training Commission, 75 East Derry Road, Hershey, PA 17033, (717) 533-5987, Ext. 205. Persons

with a disability who require an alternative format of this document (for example, large print, audio tape or Braille), should contact Major Mooney to make the necessary arrangements.

COLONEL PAUL J. EVANKO,  
*Chairperson*

**Fiscal Note:** 17-63. No fiscal impact; (8) recommends adoption.

**Annex A**

**TITLE 37. LAW**

**PART IV. MUNICIPAL POLICE OFFICERS' EDUCATION AND TRAINING COMMISSION**

**Subpart A. MUNICIPAL POLICE OFFICERS' TRAINING PROGRAM**

**CHAPTER 203. ADMINISTRATION OF THE PROGRAM**

**Subchapter B. POLICE OFFICER CERTIFICATION REQUIREMENTS**

**§ 203.11. Qualifications.**

(a) Except as provided in subsection (b), persons who are to be employed as police officers by police departments within this Commonwealth from December 21, 1996, shall:

\* \* \* \* \*

(5) Be able to read at no less than the ninth grade level, as established through the administration of the Nelson-Denny Reading Test.

(6) \* \* \*

\* \* \* \* \*

[ (6) ] (7) \* \* \*

\* \* \* \* \*

(8) Be evaluated to determine physical fitness using the standards developed by the Cooper Institute for Aerobics Research in Dallas, Texas. Each applicant shall score no lower than the 30th percentile of the Cooper standards, which coincides with the 30th percentile of the general population, in each of the five required evaluations to be eligible for employment. A person will not be enrolled in a recruit training program at a police academy certified by the Commission unless the person has obtained a score in the 30th percentile or higher for the person's age and gender as specified in the Cooper standards for each of the five evaluations. The five required evaluations are as follows:

- (i) 1.5 mile run.
- (ii) 300 meter run.
- (iii) One repetition bench press.
- (iv) One minute sit ups.
- (v) Sit and reach.

[ (7) ] (9) \* \* \*

[ (8) ] (10) \* \* \*

\* \* \* \* \*

[ (9) ] (11) \* \* \*

\* \* \* \* \*

**§ 203.12. Waiver of training.**

Applications for certification for which waivers of training are requested shall be submitted by the applicant's employing police department. An applicant for a waiver of training shall:

\* \* \* \* \*

(4) Take a certification examination administered by the Commission at a location and time designated by the Commission. The schedule for the examinations may be obtained by writing the Commission office.

(i) [ The examination will be comprised of sections which shall coincide with each major topic in the basic training curriculum, but shall exclude those topics which can be proficiency tested only. See paragraph (3).

(ii) [ The minimum passing score [ for each tested section ] will be established by the Commission. The Commission will publish a notice in the *Pennsylvania Bulletin* and in the Commission newsletter whenever the minimum passing score [ for each tested section ] changes.

[ (A) ] (ii) An applicant for a waiver of training [ who does not achieve a passing score in a tested area shall take the basic police training course corresponding to the failed examination section at a school certified by the Commission, in order to be permitted to retake the certification examination ] shall be permitted to take the certification examination a maximum of three times and only once in any day.

[ (B) ] (iii) Applicants will not be certified without obtaining a passing score on the certification examination. Failure to pass the certification examination after three attempts shall result in the applicant being required to take and pass the entire basic training course to qualify for certification.

[ (iii) ] (iv) \* \* \*

**Subchapter C. SCHOOL REQUIREMENTS**

**§ 203.33. Minimum school standards and requirements.**

(a) Schools shall initially meet and subsequently maintain the following standards:

\* \* \* \* \*

(14) An approved [ type of outdoor ] firing range shall be available to the school and used for firearms training. The range does not have to be part of the school facilities [ ; however, it shall have at least ten firing points with a minimum firing distance of 50 yards. The range ] but shall be within a reasonable traveling distance from the school. The range shall be able to accommodate the requirements of the firearms training curriculum. The range shall present no apparent danger to the public as determined by the Commission inspector.

\* \* \* \* \*

**Subchapter D. COURSE REQUIREMENTS**

**§ 203.54. Commission cheating policy.**

(a) The contents of all examinations are confidential. An individual [ observed cheating ] may not cheat or tamper in any manner with an official

**examination either conducted or sponsored by the Commission by obtaining, furnishing, accepting, or attempting to obtain, furnish or accept answers or questions to examinations, or portions thereof. Individuals may not copy, photograph or otherwise remove examination contents; nor may they use any misrepresentation or dishonest method while preparing, administering or participating in examinations. Unauthorized possession of a test, examination, quiz or a questions, answers or answer keys relating to a test, examination or quiz shall constitute cheating. An individual violating this section shall be barred from further participation in any Commission-required training and ineligible for certification.** Individuals will receive notice and have an opportunity to be heard under Subchapter G (relating to notice and hearings).

\* \* \* \* \*

[Pa.B. Doc. No. 03-397. Filed for public inspection March 7, 2003, 9:00 a.m.]

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