

Environmental Protection Agency

§ 142.65

in the operation or maintenance of the distribution system.

[54 FR 27568, June 29, 1989, as amended at 56 FR 1557, Jan. 15, 1991]

§ 142.64 Variances and exemptions from the requirements of part 141, subpart H—Filtration and Disinfection.

(a) No variances from the requirements in part 141, subpart H are permitted.

(b) No exemptions from the requirements in §141.72 (a)(3) and (b)(2) to provide disinfection are permitted.

[54 FR 27540, June 29, 1989]

§ 142.65 Variances and exemptions from the maximum contaminant levels for radionuclides.

(a)(1) Variances and exemptions from the maximum contaminant levels for combined radium-226 and radium-228, uranium, gross alpha particle activity (excluding Radon and Uranium), and beta particle and photon radioactivity.

(i) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the max-

imum contaminant levels for the radionuclides listed in §141.66(b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions, as shown in Table A to this paragraph.

TABLE A—BAT FOR RADIONUCLIDES LISTED IN § 141.66

Contaminant	BAT
Combined radium-226 and radium-228.	Ion exchange, reverse osmosis, limesoftening.
Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
Gross alpha particle activity (excluding radon and uranium).	Reverse osmosis.
Beta particle and photon radioactivity.	Ion exchange, reverse osmosis.

(ii) In addition, the Administrator hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in §141.66(b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions to small drinking water systems, defined here as those serving 10,000 persons or fewer, as shown in Table C to this paragraph.

TABLE B—LIST OF SMALL SYSTEMS COMPLIANCE TECHNOLOGIES FOR RADIONUCLIDES AND LIMITATIONS TO USE

Unit technologies	Limitations (see footnotes)	Operator skill level required ¹	Raw water quality range & considerations ¹
1. Ion exchange (IE)	(a)	Intermediate	All ground waters.
2. Point of use (POU ²) IE	(b)	Basic	All ground waters.
3. Reverse osmosis (RO)	(c)	Advanced	Surface waters usually require pre-filtration.
4. POU ² RO	(b)	Basic	Surface waters usually require pre-filtration.
5. Lime softening	(d)	Advanced	All waters.
6. Green sand filtration	(e)	Basic.	
7. Co-precipitation with barium sulfate ...	(f)	Intermediate to Advanced	Ground waters with suitable water quality.
8. Electrodialysis/electrodialysis reversal		Basic to Intermediate	All ground waters.
9. Pre-formed hydrous manganese oxide filtration.	(e)	Intermediate	All ground waters.
10. Activated alumina	(a), (h)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
11. Enhanced coagulation/filtration	(f)	Advanced	Can treat a wide range of water qualities.

¹National Research Council (NRC). Safe Water from Every Tap: Improving Water Service to Small Communities. National Academy Press, Washington, D.C. 1997.

²A POU, or "point-of-use" technology is a treatment device installed at a single tap used for the purpose of reducing contaminants in drinking water at that one tap. POU devices are typically installed at the kitchen tap. See the April 21, 2000 NODA for more details.

Limitations Footnotes: Technologies for Radionuclides:

^aThe regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.