

(THIS POLICY DOES NOT HAVE THE FORCE OF LAW)

**Designation of Community Public Water
Systems Vulnerable to Contamination
from Beta Particle and Photon
Radioactivity**

Division: DDAGW
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I. PURPOSE

This document describes the process that Ohio EPA Division of Drinking and Ground Waters (DDAGW) will follow when determining whether the Director should designate a community public water system as being vulnerable to contamination from beta particle and photon radioactivity.

II. BACKGROUND

The U.S. EPA Radionuclide Rule (40 CFR 141.26) revised December 7, 2000 requires public water systems to sample for radiological contamination. As part of this rule, 40 CFR 141.26 (b)(1), community public water systems designated by the state to be vulnerable to beta particle and photon radionuclide contamination will have increased monitoring requirements.

Five types of facilities utilize beta particle and photon radioactive materials in their operations: nuclear power plants, governmental, industrial, medical, and research. These facilities are required to maintain licenses which include strict requirements for tracking and disposal. Oversight is maintained by the Nuclear Regulatory Commission (NRC) for nuclear power plants and governmental facilities related to energy or weapons production that generate high and low level radioactive waste. The Ohio Department of Health (ODH) Bureau of Radiation Protection has oversight of industrial, medical, research and some governmental facilities (primarily medical) that generate low level radioactive waste.

NRC and ODH requirements cover monitoring, tracking, and disposal of man-made radioactive materials to ensure that off-site migration does not occur. Radioactive wastes must be transported from Ohio to a licensed disposal facility; primarily Energy Solutions in Utah. Facilities under the oversight of the NRC and ODH are unlikely to become sources of contamination. However, landfills or other disposal sites located in Ohio may be potential sources of contamination if in operation prior to the establishment of the NRC and ODH oversight programs.

Ohio Administrative Code (OAC) rule 3745-81-26(B)(1) states that the designation of vulnerability is based on potential man-made radioactive sources identified within the drinking water source protection areas, but does not provide specifics on the process. This document describes how a public water system may be designated by the director “vulnerable to beta particle and photon radioactivity” (hereafter, “beta vulnerable”).

III. POLICY:

Community public water systems (PWSs), excluding satellites, will be examined to determine if they should be designated by the director as beta vulnerable as follows:

1. Community PWSs with a high susceptibility rating as specified by drinking water source water assessment reports will be reviewed for designation as beta vulnerable. Surface water PWSs have a high susceptibility rating by default. Queries will be run using DDAGW's geographic information system (GIS) to identify facilities located within the drinking water source protection areas that may be potential contamination sources. Community PWSs with facilities under the jurisdiction of NRC and ODH programs that are identified in the drinking water source protection areas will likely not be required to conduct monitoring as long as information from these agencies indicates the facilities meet the requirements for preventing off-site release of contamination. Community PWSs with landfill facilities located in the drinking water source water protection areas in operation prior to establishment of the NRC and ODH oversight programs may be designated as beta vulnerable unless documentation or monitoring data is available to establish that contamination sources are unlikely to be present.
2. Monitoring data from community PWSs for gross beta or specific emitters of beta and photon radioactivity will be reviewed to establish whether or not contamination sources are likely to be present. If gross beta results of at least four years of monitoring do not exceed 8 pCi/L, the community PWS should not be designated as beta vulnerable and monitoring should not be required. If historical monitoring data is insufficient or if the available data indicate detections of gross beta above 8 pCi/L or of other man-made radionuclides that could impact the community PWS, then the community PWS will likely be designated as beta vulnerable and monitoring will likely be required as specified by OAC 3745-81-26 (B)(1). The level of 8 pCi/L is being used because it corresponds to the maximum contaminant level (MCL) equivalent for strontium-90 which has the lowest standard for the radionuclides required to be monitored by beta vulnerable systems.
3. In the event of a major radioactive release from a facility operating under the oversight of the NRC or ODH agencies, any community public water system which uses waters impacted by the incident may be designated as "utilizing waters contaminated by effluents from nuclear facilities" and required to perform the monitoring as specified by OAC 3745-81-26(B)(2).
4. After at least one year of monitoring is completed, the designation of a community public water system as beta vulnerable may be reviewed by the director. Based on a review of the monitoring data, the director may remove the beta vulnerable designation.

IV. HISTORY:

The Division of Drinking and Ground Waters first issued this policy on August 23, 2004. The policy was revised and reissued on March 17, 2010.