

HOW DO THE PART 380 REGULATIONS APPLY TO ME?

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The 6 NYCRR Part 380 regulations issued by the New York State Department of Environmental Conservation (DEC) apply to any person disposing of or releasing licensed radioactive material to the environment within the State. Licensed material is defined as radioactive material that is subject to licensing and regulatory control by a New York State radioactive material licensing agency, another agreement state, or the U.S. Nuclear Regulatory Commission (NRC). Activities regulated by the NRC or the U.S. Department of Energy, or performed by their contractors, are not subject to Part 380. The current Part 380 regulations became effective on May 10, 2018.

The Part 380 regulations authorize several disposal and release methods for which a Part 380 permit is not required, as well as several methods that are only authorized under a permit. Therefore, any person subject to Part 380 who disposes of or releases licensed material to the environment must comply with the provisions of Part 380, whether or not a permit is required for the specific disposal or release.

In Part 380, Subpart 380-3 specifies when permits must be obtained to authorize the disposal and release of licensed material. Subpart 380-4 identifies the disposal and release methods that are allowed without having to obtain a permit. Subpart 380-5 specifies radiation dose limits for individual members of the public, requires that doses be kept as low as reasonably achievable (ALARA), and also describes how compliance with the dose limits must be demonstrated.

According to Subpart 380-8, records must be maintained for all disposals and releases of licensed material to the environment. Subpart 380-6 requires surveys to be made that are necessary to demonstrate compliance with the provisions of Part 380. Subpart 380-9 requires notification and reporting of accidental discharges.

Subpart 380-11 contains tables of concentrations of radioactive material in effluents to air and water and releases to sanitary sewer systems. It also describes how the sum-of-ratios method is used for mixtures of radionuclides. Table II lists radionuclide effluent concentrations for releases to air and water. Table III lists monthly concentration limits for releases into sanitary sewer systems.

The following outline describes the methods of disposal and release of licensed material that are authorized in the regulations, and those that may only be authorized under a Part 380 permit. You should use this outline to evaluate your facility's radioactive materials use, handling, release, and disposal procedures to ensure that all disposal and release methods are conducted in accordance with Part 380, and to determine whether you should apply for a Part 380 permit.

Be aware that a facility found to be operating in violation of Part 380 may be subject to enforcement action and substantial penalties as authorized by the Environmental Conservation Law. If you have questions, you may contact the DEC's Radiation Control Permit Section at (518) 402-9625 for further information and assistance. Copies of the Part 380 regulations and Part 380 permit application guidelines are also available.

I. WHEN IS A PART 380 PERMIT REQUIRED?

SEE SUBPART 380-3: PERMITS

A. Discharges to Water

Under section 380-3.1(a)(2), a Part 380 permit is always required for discharges of radioactive material in effluents to ground or surface water. Contact the Radiation Control Permit Section for a copy of the *Application Guidelines for Radiation Control Permits for Discharges of Radioactive Material in Effluents to Ground or Surface Water*.

B. Emissions to Air

Under section 380-3.1(a)(1), a Part 380 permit is required for emissions of radioactive material in effluents to air, except as provided in section 380-3.4. Per section 380-3.4, emissions that meet each of the following criteria do not require permits:

- 1) Annual average concentration (at the stack) is less than 10 percent of the concentration value listed in Table II of Section 380-11.7,
- 2) for mixtures of radionuclides, the sum-of-ratios per year is less than 10 percent of unity, and
- 3) concentrations in (1) and (2) above must be met without relying on effluent treatment, if any such treatment is used.

Note: A work sheet for performing screening calculations is provided on page 4. Fill out the work sheet for each emission point that releases radioactive material to the air. If effluents from any emission point exceed the exemption criteria in Section 380-3.4 (as described above) you must apply for a Part 380 permit to authorize those emissions. In this case, contact the Radiation Control Permit Section for a copy of the *Application Guidelines for Radiation Control Permits for Emissions of Radioactive Material in Effluents to Air*.

C. Incineration

Under section 380-3.1(a)(3), a Part 380 permit is required for the incineration of licensed radioactive material and the resulting emissions of radioactive material in effluents to air, except for specific wastes meeting the "biomedical exemption" criteria in Section 380-4.3. Contact the Radiation Control Permit Section for a copy of the *Application Guidelines for Radiation Control Permits for Incineration of Radioactive Material*.

D. Environmental Studies

Under section 380-3.1(a)(5), a permit must be obtained to authorize the release of radioactive material to the environment as part of an environmental study. Contact the Radiation Control Permit Section for guidance on how to request such a permit.

E. Other Disposal or Discharge Methods

Under section 380-3.5, a variance must be obtained to authorize any method of disposal or release of radioactive material to the environment not otherwise authorized in this Part. Contact the Radiation Control Permit Section for guidance on how to request a variance.

II. **WHAT ARE ALL THE ALLOWED METHODS OF DISPOSAL IN PART 380?**

SEE SUBPART 380-4: WASTE DISPOSAL

A. Authorized Disposal Methods

Under section 380-4.1, radioactive material may only be disposed of by one of the following methods:

- 1) Transfer to an authorized recipient,
- 2) decay in storage (in accordance with your license),
- 3) release to the environment as authorized by this section 380-3 (permits),
- 4) transfer to an authorized storage, treatment, or disposal facility,
- 5) release into sanitary sewerage as authorized in section 380-4.2,
- 6) disposal of biomedical waste as authorized by section 380-4.3.

Several methods for the disposal and discharge of radioactive material to the environment are authorized in the Part 380 regulations without having to obtain a permit; other methods may only be authorized under a Part 380 permit.

a) No permit is required for the following:

- ▶ certain emissions to the air, under section 380-3.4
- ▶ discharges to sanitary sewers, under section 380-4.2
- ▶ disposal of specific biomedical waste, under section 380-4.3

b) The following may only be authorized in a permit:

- ▶ release to air or water, under Section 380-3.1
- ▶ incineration, under Section 380-3.1
- ▶ release in an environmental study, under Section 380-3.1
- ▶ variance for a release or disposal method not otherwise authorized in the regulations, under Section 380-3.5

B. Discharges to Sanitary Sewer Systems

Releases of radioactive material into municipal sanitary sewer systems are authorized under Section 380-4.2. All releases to sewers must meet each of the following criteria:

- 1) Readily soluble* in water, or biological material that is readily dispersible in water,
- 2) monthly concentration less than the limits specified in Table III of Subpart 380-11,
- 3) for mixtures of radionuclides, the sum-of-ratios is less than unity, and
- 4) total annual activity discharged less than 5 curies of H-3, 1 curie of C-14, and 1 curie of all other radionuclides combined.

* Note: NRC Information Notice 94-07, "Solubility Criteria for Liquid Effluent Releases to Sanitary Sewerage under the Revised 10 CFR Part 20" is available upon request.

C. Biomedical Exemption

According to Section 380-4.3, animal carcasses or liquid scintillation counting media or biodegradable animal bedding containing up to 0.05 microcuries of H-3 or C-14 per gram may be disposed of without regard to its radioactivity.

**WORK SHEET FOR SCREENING CALCULATIONS
TO DETERMINE IF A PART 380 PERMIT IS REQUIRED
FOR RADIOACTIVE EMISSIONS TO THE AIR**

FACILITY _____ **Emission Point #** _____

	A	B	C	D	E
1. Radionuclide	_____	_____	_____	_____	_____
form	_____	_____	_____	_____	_____
2. Yearly Discharge before treatment A_{before} ($\mu\text{Ci}/\text{yr}$)	_____	_____	_____	_____	_____ $\mu\text{Ci}/\text{yr}$
[Only consider discharges <u>before</u> effluent treatment]					
3. Flow Rate F (cfm)	_____	_____	_____	_____	_____ cfm
4. Yearly Air Flow Volume $V = F * 1.49 \text{ E}+10 \text{ ml}/\text{yr}$	_____	_____	_____	_____	_____ ml/yr
5. Annual Average Concentration $C_{\text{before}} = A_{\text{before}}/V$ ($\mu\text{Ci}/\text{ml}$)	_____	_____	_____	_____	_____ $\mu\text{Ci}/\text{ml}$
6. Table II (T) Column 1 Concentrations from Section 380-11	_____	_____	_____	_____	_____ $\mu\text{Ci}/\text{ml}$
7. Ratio of Annual Avg Conc divided by Table II concentration $R = C_{\text{before}}/T$	_____	_____	_____	_____	_____
8. For Multiple Radionuclides: Sum-of-Ratios					
	$R_A + R_B + R_C + R_D + R_E =$ _____ + _____ + _____ + _____ + _____ = _____				
9. For single isotope, is #7 > 0.1?	_____ yes	_____ no			
For mixtures, is #8 > 0.1?	_____ yes	_____ no			

If the answer to #9 is "no" (<0.1), a Part 380 permit is not required.

If the answer to #9 is "yes" (> 0.1), then a Part 380 permit is required. Contact the Radiation Control Permit Section at (518) 402-9625 for information on how to apply for a Part 380 Radiation Control Permit.